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ICAANE

Proceedings of the 2nd International Congress
on the Archaeology of the Ancient Near East

Volume 1

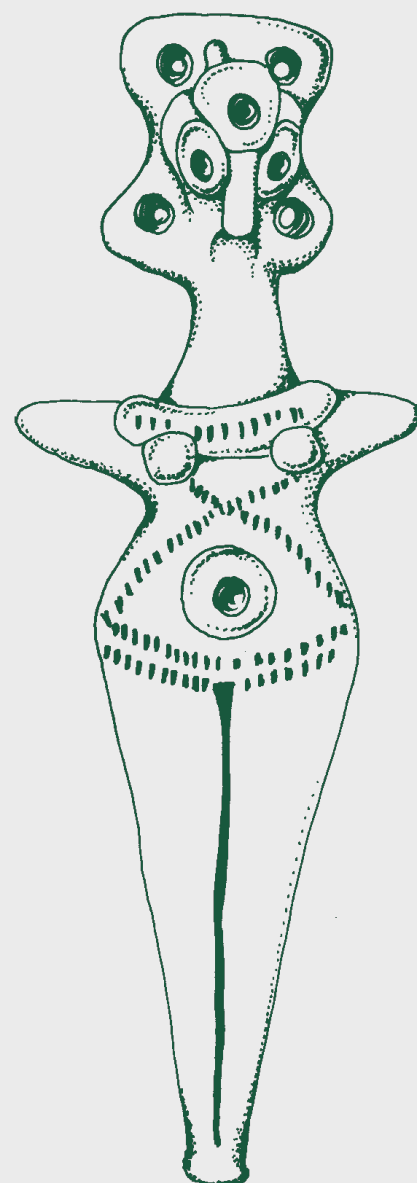
The Environment

Images of Gods and Humans

The Tell

Excavation Reports and Summaries

Varia (Chronology, Technology, Artifacts)



Department of History and Cultures, University of Bologna
Eisenbrauns

*Proceedings of the 2nd International Congress on
the Archaeology of the Ancient Near East*

22-26 May 2000, Copenhagen

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Varia (Chronology, Technology, Artifacts)

Edited by
Ingolf Thuesen

Department of History and Cultures, University of Bologna / Eisenbrauns
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Preface

The decision to organize an international congress requires a commitment to a project of unknown nature and size. The final number of participants will only be known long after many venue and accommodation reservations have been made. Many organizational aspects are associated with a range of unknown and unpredictable variables, from slide projection to securing housing for the delegates. The organization of the Second International Congress on the Archaeology of the Ancient Near East has not been an exception and therefore depended on several people and institutions. As a basic principle it was decided that students of Near Eastern Archaeology at the Carsten Niebuhr Institute, University of Copenhagen, should handle as many logistic and practical aspects of the congress as possible. The idea was to give them an opportunity to learn to know their discipline through alternative practice. This, of course, resulted in a degree of less than fully professional, but personal service. However, the 300+ participants from the international community of archaeological scholars came to Copenhagen, and were found a place to stay in a week during which we also had to compete for hotel rooms with a huge fashion fair taking place at the same time. With participants from Denmark the total number of delegates reached 400. Eventually more than 250 papers were presented in five parallel sessions, or as posters. Several sessions were organized as mini symposia or workshops by the delegates. Eighty-eight scientific contributions are published in these proceedings of the 2ICAANE (www.icaane.net), while some of the symposium reports have been submitted for publication elsewhere. Beside the scientific reports, the congress hosted a wide range of social activities and an excursion to the Moesgaard Museum in Århus.

My first thanks go to all the participants of the 2ICAANE for coming to Copenhagen and for sharing their results with colleagues, and a special thank to the organizers of the mini symposia and workshops. The possibility of setting up a mini symposium or workshop within the congress appeared to be a popular alternative to traditional sessions.

The members of the scientific committee of the ICAANE were always very helpful in advising the organizers in Copenhagen on many general questions concerning academic and political matters. In Denmark, a National Committee was established as soon as the 2ICAANE became a reality. Its members represented most of the institutions in Denmark with interest or affinities to the congress, and the group supported the organizers in many invaluable ways both in scientific and social matters. In particular, I would like to thank the members representing the Moesgaard Museum for kindly inviting the congress to Århus, the Lord Mayor of Copenhagen for receiving the participants in the Town Hall, the National Museum for giving the participants hands-on access to finds from Hama and hosting a reception, and the New Carlsberg Glyptotek for hosting the congress dinner.

Pernille Bangsgaard Jensen, Sarah Kayser and Helle Rasmussen took care of the demanding job of running a secretarial bureau which, from a very early point, had to establish routines to solve the numerous logistic problems of the congress from housing to transportation. It was hard and demanding work which was successfully accomplished.

One of the most complex challenges of the congress was to organize more than 200 papers in sessions that were meaningful. This task was accomplished by a programme committee

including Bo Dahl Hermansen, Charlott Hoffmann Jensen and David Warburton. As is often the case, many compromises had to be made, but in the end the committee worked out a plan which gave room for as many presentations as possible, minimizing unavoidable thematic conflicts.

The organization of the entire congress was coordinated by Tine Bagh, Charlott Hoffmann Jensen and Lea Kaliszan. The tremendous work, stimulating ideas and organizational talent they added to the congress was essential to its success.

The congress would have never taken place if not for the generous donations by the following various foundations and sponsors: The Carlsberg Foundation, the C. L. David Foundation, the H. P. Hjerl Hansen Mindefondet for Dansk Palæstina Forskning, the Danish Council for Independent Research, the Faculty of Humanities of the University of Copenhagen, the Faculty of Theology of the University of Copenhagen, SAS – Scandinavian Airlines System.

Ingolf Thuesen

Preface to the digital edition

The papers published here were collected in 2001 by Emily Cocke from the participants in the 2ICAANE and were preliminarily edited in Copenhagen. The two volumes began then to be typeset by Jim Eisenbraun and his staff at Eisenbrauns and they reached the present state of elaboration by mid-2008. Because of a series of reasons, for which ultimately as the editor I must bear the sole responsibility, the book remained as it is since then, with no further editing and standardization or a final proof-reading by the authors. Regrettable as this may be, it has seemed preferable to add no further delay to the publication of this book: while some articles have been updated and published elsewhere, the fact is that most of the information and the materials contained here is still of great scientific value and deserves to be made known. Consequently, we hope in the indulgence of the authors who entrusted to us their papers at the time: present-day scholarship quickly outdates papers, but nonetheless they stay there to document the history of our field and our intellectual quests within a cooperative environment.

Once it was decided that an open access digital edition is the most suitable form of publication, the generous release of copyright by Jim Eisenbraun, whose commitment to ancient Near Eastern studies extends far beyond the logic of commercial publishing, should be acknowledged. I also owe a debt of gratitude to my friend and colleague Nicolò Marchetti, who accepted these two volumes in the open access series OrientLab at the University of Bologna: he took care of updating the table of contents and performed some necessary minor checks on the pdf files, carried out with the help of Gabriele Giacosa, while Massimo Bozzoli was responsible for technical production requirements and the cover design.

Ingolf Thuesen

Copenhagen, 15th December 2016

Introduction

INGOLF THUESEN

The Carsten Niebuhr Institute of Near Eastern Studies

The proceedings are structured according to the main themes of the congress. The themes were chosen not only because of their scientific importance, but also to show and strengthen the position of Near Eastern Archaeology within our contemporary society.

The first theme (Section I), *the Environment*, concerns the natural setting for human activities in the ancient Near East. That is one of the major factors of human adaptation and becomes crucial when humans, through over exploitation of resources, shift the natural equilibrium. The understanding of the impact of humans upon nature is still a basic challenge to any society at the beginning of the 3rd millennium A.D.

The second theme (Section II) addresses one of the traditional strong dimensions of Near Eastern Archaeology, namely the art historical aspect. The title, *the Images of Gods and Humans*, covers a set of contributions which describe and analyze the way the people of the past saw themselves and their gods.

The third theme (Section III), *the Tell*, concerns our field work and the nature of one of the most prominent and typical monuments of the Near East. The theme as such deals with our mental and physical conceptualization of tells, which determines the strategies and methods we choose for achieving information on the past.

The fourth main theme, *Islamic Archaeology*, was introduced in the Copenhagen ICAANE, as the Carsten Niebuhr Institute was in the process of building a new branch of the discipline dealing with the material culture and art of the Islamic periods. Although the theme is chronologically a bit out of focus, most field project dealing with Bronze or Iron Ages are likely to be confronted with remains from more recent and Islamic periods. It is our duty to offer the same attention to those remains as to the remains we originally targeted on. Not least due to the efforts of Alan Walmsley, the Islamic archaeology session became a very substantial part of the 2ICAANE. In the proceedings, the Islamic papers are placed in the second volume (Sections VI and VII).

The ICAANE is also a forum for presenting excavation reports and summaries, and these are published in a separate Section IV. A number of papers without a clear affinity to the main themes dealing, for instance, with chronology, technology etc. are placed in Section V.

Following the format of the 1ICAANE proceedings, the general programme for the 2ICAANE is printed at the end of volume II.

SECTION I

The Environment

The Landscape Archaeology of Jordan— Early Villages, Towns, and Cities: Opening Speech

ZEIDAN A. KAFABI
University of Irbid

The ancient Near East represents a geographical term that comprises a number of various natural regions (Levant, Mesopotamia, and Anatolia). In this presentation, I am going to limit myself to the Levant only, with a specific concentration on Jordan.

A quick glance at a map showing the ancient Near Eastern area indicates that it bridges Africa, Asia, and Europe. The archaeological remains excavated at sites located on the eastern Mediterranean coastal corridor have at various times been colonized by communities indigenous to each of the continents. In addition, the geographic and climatic variation of this region has also helped in creating a suitable environment for plant and animals since the early ages. Also, the Levant enjoys a diversity of environmental settings, particularly for such a small area dominated by a generally arid climate. Forested areas, steppe, and desert areas are visible, and they are altered by slight changes in precipitation and temperature patterns.

Generally speaking, the major physiographic features of the Levant from west to east include the coastal plain, the western hill zone, the Afro-Asian Rift, the eastern mountain ranges, and the desert area. Moreover, it must be stated that the shoreline features have changed a little during the past 10,000 years (Henry 1992).

The environmental conditions prevailing when agriculture was first developed in the ancient Near East and during the early Holocene are somewhat obscure. Recent data on climatic conditions are somehow more precise and explain the environmental setting during the transition from the hunter/gatherer to the farming communities (Baruch and Bottema 1991; Moore and Hillman 1992).

Occupations of the Neolithic settlements were dependent on certain climatic preconditions of which vegetation gives the best production. This means that climatically induced changes in vegetation may have had severe consequences for the pattern of former habitation areas. This is well documented by the studies conducted by Van Zeist, Bottema, Neef, and others (Van Zeist and Bottema 1982; Neef, Personal Communication). Nevertheless, it may be suggested that more investigations are needed in this regard, especially in the Levant, to help understand the early farming communities.

With regard to the archaeological record of the Levant, it is obvious that it has a long history of occupation starting from the Paleolithic. The history of such a large region is of course not uniform, but differs from area to area. During the last century there has been a great deal of archaeological work done in the ancient Near East. But, apart from the last three decades, much of the activity concentrated on spectacular objects rather than tackling

archaeological problems. Perhaps even today problems of architecture and the history of art, as well as ceramics and object finds, are much more important to some archaeologists than the simple questions of food production, economy, and palaeo-environment.

Jordan is located to the east of the Jordan Rift Valley and constitutes the southeastern-most corner of the Levant. This country contains three geographical zones: the Jordan Rift Valley, the hilly mountainous ranges, and the Badia (desert). Intensive archaeological surveys and excavations (Garrard and Gebel 1988) along with other palaeo-environmental studies (e.g., Garrard et al. 1987; Henry 1998; 1986) over the past two decades have led to an accumulation of a sizable body of information. Below we present a brief study about the Neolithic towns and villages excavated in Jordan.

Zone I: The Eastern Jordan Valley

The investigations along the Jordan Valley have continued since the 20th century almost without interruption. 'Ubeidiyyeh is the oldest site studied dated to ca. 1.4–1.0 million years on the basis of long-range faunal comparisons (Bar-Yosef 1987: 107). However, Epi-Paleolithic (Natufian) villages were erected in the valley near water sources and springs such as Wadi Hammeh in the area of Pella (Edwards et al. 1988). Around 10,300 B.P. an agricultural economy developed in addition to hunting, trapping, and gathering of wild fruits and seeds in the western side of the Valley as at Jericho. The success of these early villages led to the establishment of the well-known PPNB communities (ca. 9,300–8,000 B.P.) spread all over the Levant. Given the available archaeological records from the PPNB sites throughout the Levant, it appeared that the Jordan Valley played a major role in establishing the farming and herding subsistence strategy. Unfortunately, there are no examples to be illustrated from the eastern side of the Jordan Valley, although there are many on the west side as Sheikh 'Ali, Munhata, and Jericho.

It has been already stated (Kafafi 1998) that during the 6th and 5th millennia B.C. the settlement pattern changed drastically, and only later, with the establishment of the so-called Ghassulian culture in the 4th millennium B.C., did the Rift Valley regain its importance in the Levantine prehistory. Indeed, the most recent published results of the excavations conducted at Sha'ar Hagolan (Garfinkel 1999) and Abu Hamid (Dollfus and Kafafi 1993; Lovellet et al. 1997) obliged us to change this claim. It seems that these sites were occupied during the 6th and 5th millennia B.C.

The site of Abu Hamid is a village situated on a terrace comprised of marl deposited in the Pleistocene Lake Lisan (Hourani 1997). It lies at a mean altitude of 240 m below sea level. It is bordered on its southern and northern sides by two small valleys in which perennial springs are located, and at the present time the Jordan River is only 0.5 km to the west. Thus, access to water is unlikely to have been a problem for the inhabitants. Three main occupational levels were registered from the site, they are: Upper (Ghassulian, the 4th millennium), Middle (Wadi Rabah, second half of the 5th millennium B.C.), and Lower (Late Neolithic/Second half of the 6th–beginning of the 5th millennium B.C.).

The Upper Levels consist of sediments ranging between 0.4 and 0.7 m in thickness. It produced several mud-brick houses with stone foundation, pits, pottery, and other material related to the 4th millennium B.C.

In the Middle Levels, houses built of greenish plano-convex mud bricks were excavated. They consisted of more than one room. Hearths, pits platforms, pottery sherds, and flint tools were also excavated.

The Lower Levels at Abu Hamid consisted of large compacted red clay sediment (terra-rossa) and is 0.3–0.8 m thick. It yielded an elliptical house built of mud-brick, pits, basins, fireplaces, floors, pottery sherds, flint tools and other small objects. These finds pointed to the second half of the 6th millennium B.C. (Lovell et al. 1997).

From the beginning of the occupation of the site, the subsistence was based exclusively on agriculture and herding products. The evidence of hunting is minimal.

The site of Deir ‘Alla located in the Ghor of Abu Obeidah on the floor of the Jordan Valley, about 4 km to the north of the Zerqa River, and roughly halfway between the Lake of Tiberias and the Dead Sea. It may be considered one of the major Bronze/Iron Ages cities found in the Valley. The Tell measures approximately 200 m × 200 m at its bottom; the highest point is 200 m below sea level and is 30 m above the surrounding areas (van der Kooij and Ibrahim 1989).

During the Pleistocene era, the area of the Jordan Valley was covered with the water of the Lake Lisan water, and the Zerqa River emptied in this lake and deposited a huge amount of sediments. As the area became dry, dunes of thick deposits of banded clay were formed on top of the dry lakebed. This kind of deposition of material was used for centuries for the construction of houses and for pottery vessels making.

The results of the excavations of the joint Jordano-Dutch expedition have shown that the site was continuously occupied from the Middle Bronze Age until the end of the Persian period (ca. from the 16th to the 4th centuries B.C.). A cemetery dated to the Ayyubid/Mamluk period (ca. 12th–16th century A.D.) reoccupied the tell. Based on the excavated archaeological material at the site as civil and religious architectures, store-rooms, workshops, written documents, pottery vessels, and many other objects, it may be deduced that it served as a small city during the Late Bronze and Iron Ages.

Zone II: The Mountainous Ranges

The Jordanian hilly mountainous ranges run parallel to the rift along the eastern margin and consists of a series of mountains namely: Irbid, Ajlun, Belqa’, Moab, and Al-Sharah. It measures 370 km in length, and differs in width from one area to another, however, it is 25 km to the south of the city of Madaba and 50 km in the area of the cities es-Salt and Ajlun. It contains two major basins, Irbid and Beq’a, and consists of limestone in the north and center of Jordan and of sandstone in the south (Bender 1968). Small rivers and wadis are running through these mountains and meander either in the Jordan River, Dead Sea, or Wadi Arabah.

Many archaeological surveys and excavations have been conducted in this area. The excavations conducted at the confluence of the Wadi Zerqa/Wadi Duleil indicate that the people inhabited this area as early as the Lower Paleolithic period (Parenti et al. 1997). In addition mousterian tools have been excavated and surveyed at many other areas such as the Wadi el-Hasa (Clark et al. 1988) and Ras en-Neqab (Henry 1986). Also, Upper Paleolithic, and Epi-Paleolithic sites were found at several parts of the mountain ranges (Coinman 1997).

Studies of the early farming communities in Jordan revealed a very small number of the PPNA sites as ‘Iraq ed-Dub, in the Ajlun Mountains and Feinan on the banks of the Wadi Feinan that meanders in Wadi Araba. Compared to what has been uncovered in the Jordan Valley, we must admit that the Jordanian sites are closer in size and function to Gilgal and Netiv Hagdud than to Jericho. Curvilinear and elliptical shaped houses were uncovered at ‘Iraq ed-Dub and Wadi Feinan.

In contrast to the PPNA, the PPNB period is well represented with sites reported from several areas in Jordan. All of these sites are located on wadis, and some of them, such as 'Ain Ghazal, Basta, Wadi Shu'eib, and Basta, have springs and are more than 10 hectares in size. These, we name *towns* due to the large area, structures, planning, and the explanation of the material culture found there.

Several types of architecture have been registered at the excavated PPNB sites. For example, at Beidha semi-subterranean houses are gradually replaced by rectangular forms that culminate in multi-room, two-storey buildings. Meanwhile, at 'Ain Ghazal the MPPNB rectangular houses developed into multi-room, two-storey buildings. In addition, curvilinear buildings dated to the LPPNB were excavated. The site of 'Ain Ghazal may give us the best example for early towns excavated in Jordan.

The site of 'Ain Ghazal is situated in a relatively rich environmental setting directly adjacent to the Zerqa River, the longest drainage system in the highland of Jordan. It is located at an elevation of about 720 m above sea level, between the oak-park woodland to the west and the open steppe-desert to the east. The preliminary geomorphologic studies of the region show that the Zerqa Valley contains a complex but orderly array of landforms and sediments (Mandel and Simmons 1988).

The town of 'Ain Ghazal started as a small village by ca. 9,250 B.P., reaching a size of 4–5 hectares by about 8,500 B.P. It seems that the village grew rapidly to about twice the size, and included a portion to the east across the Zerqa River and reached an area of 14 hectares. As a result of the excavations, it seems that the site underwent an in situ transition from the aceramic to the ceramic Neolithic.

In regard to architecture, the PPN-B houses were built of stones with plastered and painted floors. The moderate slope of the hillside was terraced to provide leveled areas for the construction of the buildings (Banning and Byrd 1984; 1987). Rectangular, curvilinear, and apsidal structures were uncovered and dated to the PPNB, PPNC, and the Yarmoukian periods.

The lime-plastered statues found at the site singled it out from other contemporaneous settlements in the ancient Near East. In addition, human and animal figurines were encountered (Schmandt-Besserat 1998).

Early *cities* attributed to the Bronze Age were found in large numbers on the mountain ranges. Due to the short time we have for this presentation, the site Khirbet ez-Zeiragoun is taken as an example. The Jordanian-German joint expedition spent six seasons of excavations at the site and uncovered remains dated from the second half of the 4th millennium until the end of the 3d millennium B.C. The site is overlooking Wadi esh-Shallaleh from the eastern side and was enclosed by a massive city-wall from the north, west, and south sides. It covers an area measuring 400 × 300 m and has an occupational history similar to the EB Bab edh-Dhra' in the Dead Sea Lisan area (Ibrahim and Mittmann 1997: 388). It seems that the city flourished during the EBII/EBIII periods with town gates, temple complex and administration and domestic buildings. In addition, a water system and a number of small finds, especially seal impressions, was found at the site.

Zone III: The Badia (Desert)

Geographically speaking, the Badia is the area located to the east of the hilly mountain ranges and extends into Syria, Iraq, and Saudi Arabia. Bender divides the Jordanian Badia into three regions:

1. The northeastern desert and basaltic area, subdivided into:
 - i. Northeastern basalt area (*Harra*), which has been considered to be an extension of Jebel Al-'Arab (Druze) in south Syria.
 - ii. Northeastern desert area. It includes Al-Azraq Basin.
2. The middle desert area (*Hamad*), located between the catchment areas of the Azraq Basin and Wadi Sarhan from the north and eastern side, Tubeiq Mountain in Saudi Arabia in the southeastern side, Ras en-neqab in the south, and it stops by the eastern slopes of the mountain ranges. It contains the Jafer Basin, which is 240 sq. km.
3. Hisma Area (*Ras en-Naqab and Wadi Rum*): it comprises several sandstone mountains and basins as Qa'ed-Disi.

Scholars such as A. Betts, A. Garrard, and D. O. Henry have undertaken many archaeological studies covering most of the three areas. The surveys and excavations produced sites related to the Lower, Middle, and Upper Paleolithic, Epi-Palaeolithic, Neolithic, Chalcolithic, and Bronze Ages. However, the nature of the excavated archaeological material and the studied faunal remains confirmed that pastoralists inhabited the area during the Neolithic period. Those people used to live in *seasonal camps*, and the best example may be given from Wadi Jilat (Garrard et al. 1988).

Jawa, located in the basalt desert and founded during the EBI Age is one of the earliest towns or cities in Jordan. It is fortified by walls and gates and sustained by an elaborate water-harvesting system of dams, canals, and pools (Helms 1981). The site is located on a rocky island between the main gorge of Wadi Rajil and a tributary valley entering the main gorge from the west (Betts 1997: 210). A similar site known as Jebel Rukeis has also recently been uncovered in the so-called Black Desert by A. Betts.

In conclusion, the archaeological excavations conducted in Jordan revealed that it has been continuously occupied from prehistoric periods until modern times. Camps, villages, towns, and cities dated to all periods were excavated. These settlements were established by people who favored the fertile areas for living. They placed their settlements very close to perennial water sources and lived on good terms with their neighbors, as is the situation nowadays.

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Policy, Activities and New Archaeological Discoveries in Israel

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Israel Antiquities Authority

Abstract

There are about 23,000 officially declared archaeological sites in Israel covering 17% of the country's area. Antiquities sites are defined as property of the state, and their impairment may be allowed, only with agreement from the Director of the Israel Antiquities Authority (IAA), and for two purposes only: (1) archaeological research and conservation, (2) development of the country. The main task of the IAA is to define which archaeological sites may or not be harmed for the sake of developing the country. This determination requires total knowledge and intimate familiarity with all the country's sites and the ability to determine and classify the archaeological and religious significance of each site.

The conduct of a rescue excavation is a preliminary condition before harm can be caused to any antiquities. The excavation can be conducted by the IAA or another Israeli academic institute. The developer can choose which institute he wants to conduct the excavation.

Because rescue excavations are usually conducted on secondary sites, major archaeological discoveries resulting from rescue excavations are primarily related to landscape archaeology, and five such discoveries that greatly influenced our understanding of Israel's archaeology are listed: (1) discovery of the settlement concentration of EBIV-MBI in Jerusalem, (2) discovery of prehistoric sites below the alluvial layer in the Jezreel Valley, (3) excavation of Chalcolithic period burial caves in the Upper Galilee, (4) discovery and excavation of tens and hundreds of Hellenistic period farmsteads in the northern Judean *shephela*, and (5) excavation of Roman-period hiding complexes in the Galilee.

Beside these discoveries, rescue excavations have yielded important artifacts, such as the *Tyche* from H. Tinshemeth, the Kathisma Church in Jerusalem, and two *serekhim* of Narmer, from Lod.

The aim of this paper is not to discuss archaeological topics in depth but to briefly present the policy and some recent archaeological discoveries of the Israel Antiquities Authority (IAA) in Israel.

The IAA is designated by law with responsibility for all archaeological matters in the country. Amongst other duties the IAA is legally mandated to conduct an archaeological survey of the entire country (including the sea); declare antiquity sites and attend their preservation; conduct rescue excavations; conserve archaeological sites; educate toward heritage preservation; combat antiquities theft; be responsible for the national collections of antiquities; conduct multi-disciplinary archaeological research; and publish scientific reports of all its research. For these purposes we employ about 450 employees who are divided into regional and professional units (Fig. 1).

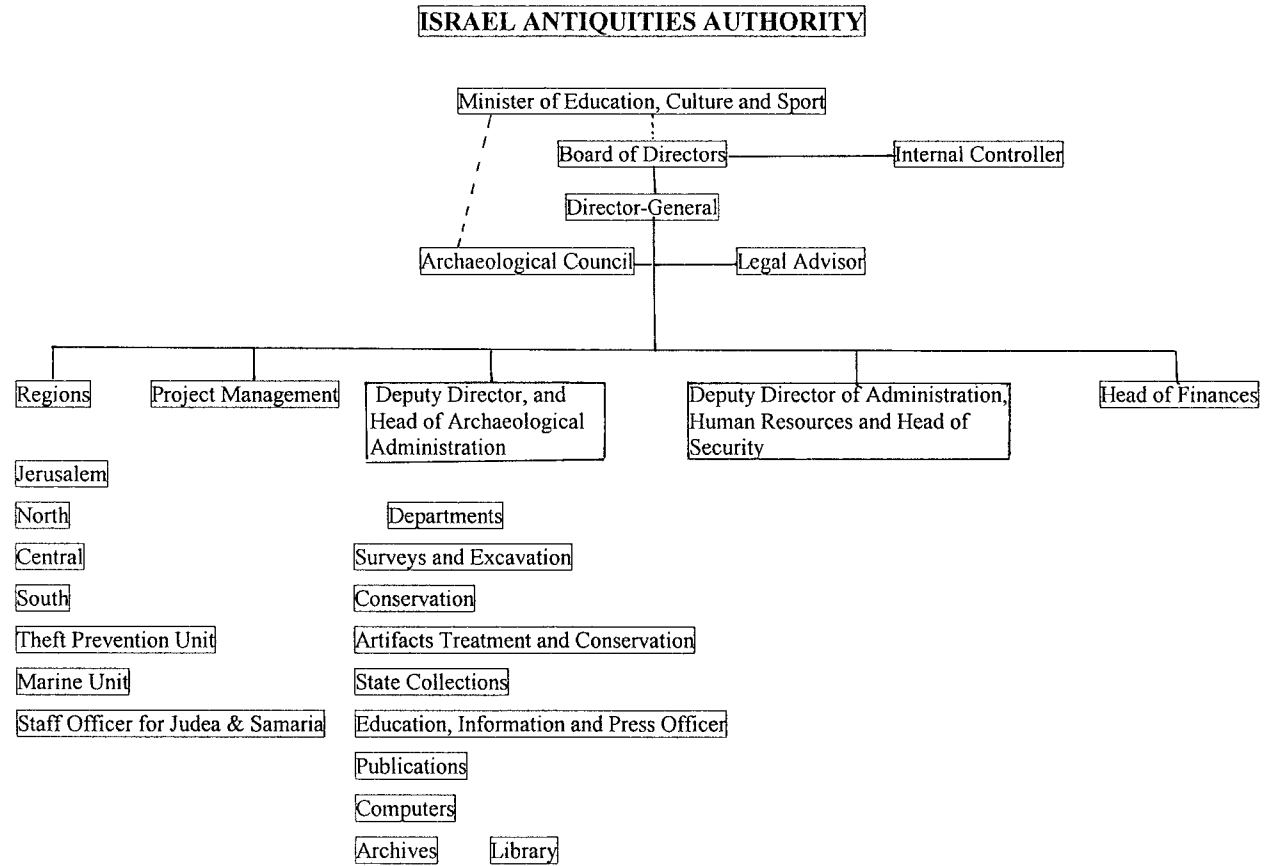


FIGURE 1. Structure of the IAA.

In Israel's area of 21,000 km² inside the green line, there are about 17,300 declared antiquity sites, totaling about 14% of the country's area. Many of these sites were discovered as a result of archaeological survey, which has thus far surveyed 50 maps out of a total of 210 maps. About 30 more maps are currently in an advanced stage. But the number of declared sites is not final since many sites are covered with earth and it is impossible to discover them without removing the upper layers of earth. Our policy is not to remove the layers of earth, but to closely supervise developers working on the site.

Archaeological sites are currently defined by two coordinates, northeast and southwest. We are now preparing for a changeover to an advanced GIS system. As a result, we will be changing, in the near future, from square declarations to polygonal declarations that will reflect more exactly the boundaries of the site. Israel Law of Antiquities defines antiquity sites as national property. Damaging them is permitted only with permission from the Director of the IAA and for two purposes only:

1. Archaeological research and conservation.
2. Development of the country.

The main task of the IAA is to define which archaeological sites may or may not be harmed for the sake of development.

This determination requires total knowledge and intimate familiarity with all the country's sites and the ability to classify each site according to its archaeological and religious significance.

A rescue excavation is a preliminary condition before harm can be caused to an archaeological site. The excavation can be conducted by the IAA, or another Israeli academic institute. The developer can choose which institute he wants to conduct the excavation. Rescue excavations are a compromise we must accept since it is impossible to prevent development of the entire country. We permit damage and even complete destruction of antiquities sites for the sake of development, but only of secondary sites, or those on the outer edges of the main sites, and only after excavation and complete documentation of all that will be destroyed by development.

The main scientific profit from rescue excavations, which are today the majority of archaeological activities conducted in Israel, is that many sites are discovered, changing the record of ancient settlement patterns in many areas of the country. Some buried archaeological sites have been found that could not be discovered by an archaeological survey. An example of such a site, and a good illustration of the limitations of a survey, is *Okef Shoham* (*Shoham bypass*; Fig. 2), a site that in spite of its location adjoining a main road in the center of the country, was not found by surveys conducted in the area. Seven archaeological layers were uncovered here, from the Iron Age until the Middle Ages (Dahari and Ad 2000: 56–59).

Because rescue excavations are conducted mainly on secondary sites, important archaeological discoveries resulting from such excavations are related especially to landscape archaeology. I will list five archaeological discoveries, or phenomenon, that greatly influenced our understanding of the archaeology of Israel:

1. Before construction began in the new southern neighborhoods of Jerusalem in the Refa'im Valley area, a large concentration of settlements was discovered and excavated. It contained farmsteads and villages from the EB IV and MB I periods (Eisenberg 1988–89: 84–89; 1989–90: 150–56). Sites from these periods were rarely known in this geographic area, and it was impossible to discover most of them during the surveys conducted before the excavations. The rescue excavations that exposed these sites contributed greatly to our understanding of the pattern of settlements in the Bronze Age Jerusalem vicinity.
2. Digging foundations for new construction in Afula, resulted in the discovery of some Neolithic sites below the alluvial layer in the largest valley in northern Israel, the Jezreel Valley. Sites of this nature were known to exist on the bedrock outskirts of the valley, but not in the center of the valley, which is covered by deep layers of earth. From this discovery, we can assume that many prehistoric sites, of which we know nothing today, are located underground in the Jezreel Valley.
3. Rescue excavations in a stalactite cave in Peqi'in in the upper Galilee, produced a multitude of unique Chalcolithic period ossuaries and other finds (Fig. 3). This was a revolutionary discovery since up until that point, we didn't know anything of Chalcolithic culture in upper Galilee (Gal et al. 1995: 20–22). Moreover, we were searching for a way to link Golan's Chalcolithic culture (Epstein 1998) with that of the seacoast. But it appears that archaeological lacunae do not remain for long. Last year, a Chalcolithic settlement was discovered in upper Galilee, and we assume that, as a result, additional chalcolithic sites will be found and the lacunae will disappear.
4. Hellenistic culture in Israel was well known, especially in the larger towns, such as Samaria and Maresha. The construction of the new towns Mazor and Shoham in



FIGURE 2. Air photo of Shoham Bypass Site.



FIGURE 3. Ossuary from Peqi'in Cave.

the northern Judean plain and the excavations accompanying the construction of the Cross-Israel Highway, resulted in the discovery and excavation of tens of Hellenistic period farmsteads and villages. It has thus become clear that the area flourished in the Hellenistic period, with a high standard of living, and an economy based mainly on agriculture (Zilberbud and Amit 1999: 55*–64*). The phenomenon of massive Hellenistic sites in this region was unknown before, although the area was well surveyed.

5. Refuge hiding caves dating mainly from the Bar Kokhba Revolt, the second rebellion by the Jews against the Romans that took place in the years 132 to 135 C.E., were discovered in the Judean plain beginning from the late 1960s. Until the present, some hundreds of hewn caves have been found under buildings or in water holes. The phenomenon of refuge hiding caves was known in Judea only. A few years ago a complex of such caves was found in a water hole in Kefar Kanah in the

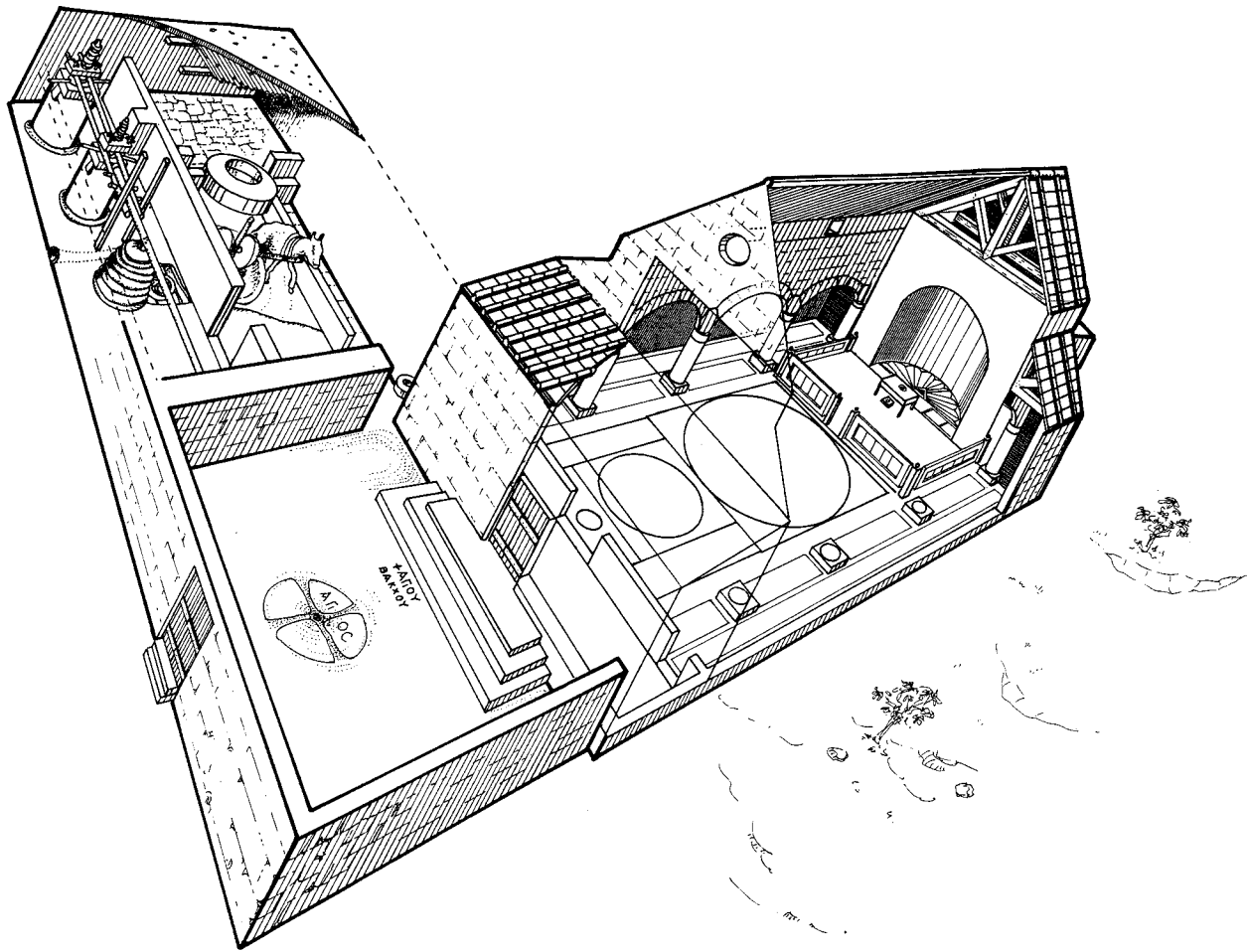


FIGURE 4. Isometric reconstruction of St. Bacchus church at Hurvat Tinshemet.

Galilee. Immediately after which two additional complexes were found in Kefar Kanah, and afterward in Sepphoris and other settlements in upper and lower Galilee (unpublished yet). The phenomenon of hiding caves is probably not as common as in the Judean plain, but existed in the Galilee as well.

Do not think that I have become a believer in rescue excavations due to their value to landscape archaeology and historic geography, the opposite is true—I support every effort that will integrate antiquity sites with modern construction in the form of archaeological parks or in any other way. We believe that creating a GIS archaeological layer that will include all archaeological information in Israel, and be available to the public via the Internet, will help to reduce damage to antiquity sites since information about them will be more available to planners. Not only will the archaeological site as a complex appear, buildings and other remnants on the site will be included together with their significance. It will then be possible to plan construction on the site without causing damage to antiquities and they can be more incorporated in the construction plan.

Alongside the discoveries I've discussed here, which are a valuable addition to our understanding of the geographic-historic settlement process, individual finds from rescue excavations also have scientific value. I will list some of them.



FIGURE 5. The Goddess Tyche from Hurvat Tinsheemet.

At a rescue excavation at *Hurvat Tinsheemet* near Lod, a Byzantine church and oil press, dedicated to St. Bacchus, were found (Dahari 1998: 67–68; Dahari 1999: 246–48). The church is located in an open field with no nearby settlement (Fig. 4). During the excavation, in addition to attractive fifth century C.E. mosaics, a marble medallion, 72 cm in diameter depicting the goddess Tyche (Fortuna), was found (Fig. 5). The walls of the city were her crown, and she wore five necklaces, bracelets and earrings, with a cornucopia in one hand and a scepter in the other. Two ancient Greek inscriptions, each beginning and ending with a cross surround the goddess. The upper inscription is in memory of the governor (or proconsul) Procopios, son of Theodoros, probably the donor of the medallion to the church, the lower inscription tells us the date:

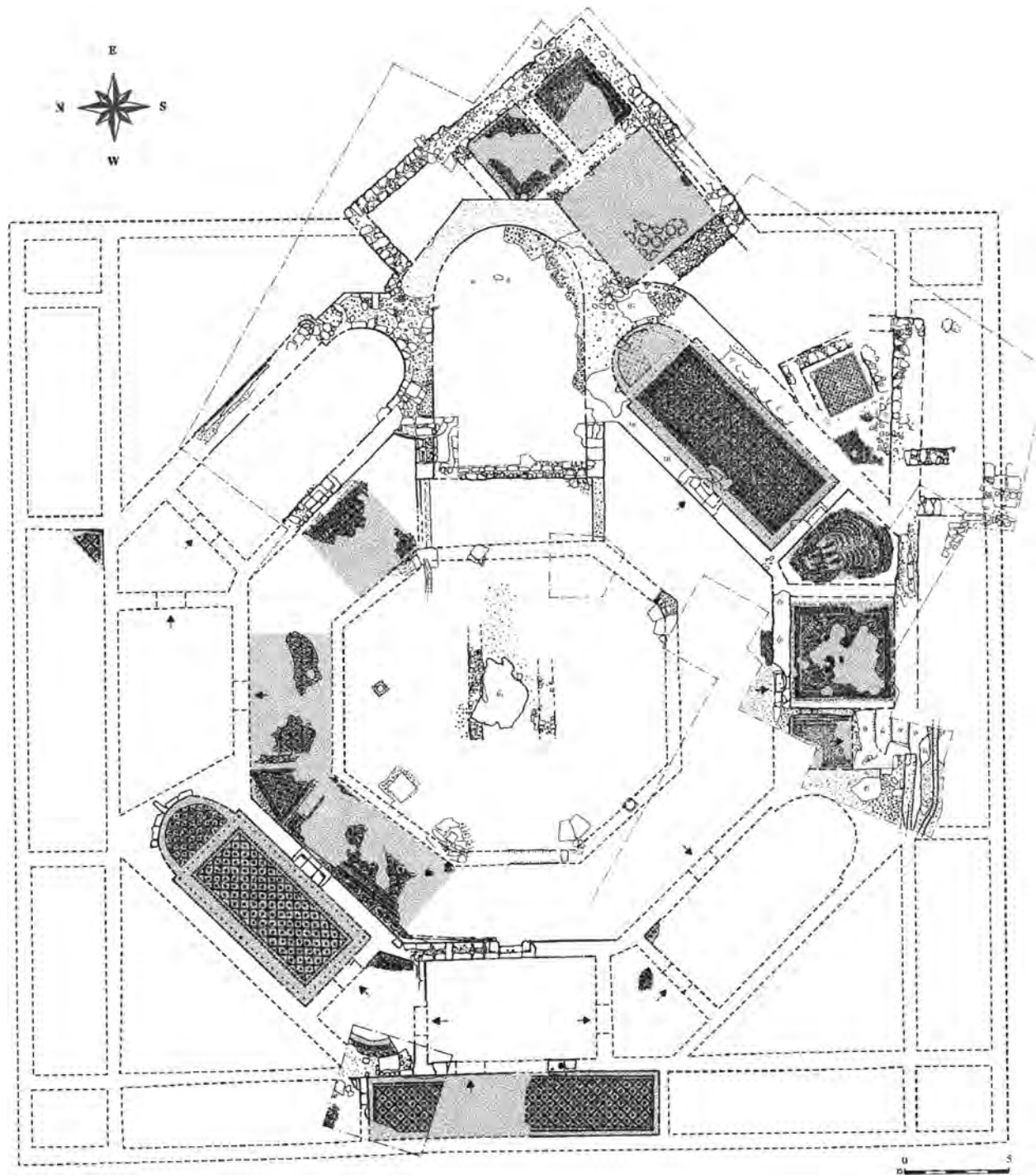


FIGURE 6. The Kathisma church, ground plan: Israel Antiquities Authority.

ἐν μηνί ξαντικός τοῦ ΕΜΧ ἐτος

In the month of Ksantikos (April) in the year 645

The date probably refers to the Pompeian calendar, which tells us that the year is between spring 582 C.E. and spring 586 C.E. (Di Segni 1999: 627). The closest parallels to this unique Tyche are a Tyche in a *Bet Shean* mosaic (Mazor 1987–88: 19) and the three Tyche in a



FIGURE 7. Mosaic floor from Lod.

mosaic at *Madaba* in Jordan (Piccirillo 1993: 50–63). From the aspects of style and iconography, and its location at an isolated church, the Tyche from Horvat Tinshemet is without doubt, a unique find.

At a rescue excavation prior to installation of underground pipes at the side of the Jerusalem-Bethlehem Road, the Kathisma (in Greek: The Seat) Church was discovered and excavated (Avner 2000: 101*–3*). This octagonal church, built in the fourth century C.E., surrounded a large stone that, according to Christian tradition, served as a resting place for Mary, mother of Jesus on her way from Jerusalem to Bethlehem for the birth of Jesus (Fig. 6). The church was rehabilitated in the sixth and seventh centuries, and it appears that in the eighth century it served both as a Christian church and as Moslem mosque, since a prayer niche was added on the south side facing Mecca.

Prior to construction of Hi-tech center at the edge of *Tel Lod*, the IAA conducted a rescue excavation in 1999. The excavation yielded the northernmost finds known, indicating Egyptian presence in Israel from Early Dynastic times. Amongst other finds, our archaeologists discovered five *sereks* of the Pharaoh, Na'armer, founder of the First Dynasty in Egypt. This find, together with the Roman mosaic floor uncovered some years ago in the center of Lod (Avissar 1998: 169–72; Fig. 7 here), also known as *Diospolis* and *Georgiopolis* in the past, testifies to the lengthy history of Lod, which has been continuously inhabited from the Neolithic Era until today.

I have presented, in a nutshell, some examples of archaeological information gathered from rescue excavations. I would like to close my paper by referring to the extensive commitment of the Israel Antiquities Authority toward full and scientific publication of all past and present rescue excavations in Israel. This commitment could have remained only a formal declaration, without a detailed program backed by appropriate budget, and the understanding that there is no more important archaeological mission than publications. The IAA is indeed very active in this area. In the years 1996–99 more final reports have been submitted for publication than the number of rescue excavations conducted. If the present trend continues, the gap in publication of past excavations will be closed within a few years.

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Five Years of Archaeology in Palestine

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Abstract

The New Palestinian Department of Antiquities has now existed for five years. This report provides an overview of its vision, inception, objectives, development and activities during this formative period.

Introduction

The inauguration in August, 1994, of the Department of Antiquities of Palestine under the Palestinian National Authority was a momentous event (Taha 1998: 3–7, 1999a: 14–17). In one sense, however, it may be considered the revival of the Department of Antiquities that was established in 1920 under the British Mandate. This authority was terminated with the political events of 1948, when Israel was established, while Jordan assumed these responsibilities for the West Bank and Egypt for the Gaza strip.

Following the Palestinian-Israeli agreement in 1993, Jericho and Gaza were handed over to Palestinian control. Subsequently in Autumn 1994 and December 1995 the Palestinian National Authority was given control throughout the West Bank and Gaza Strip within several spheres of responsibilities, including archaeology in areas A and B. In some parts within area C powers and responsibilities in the sphere of archaeology will be transferred gradually to the Palestinian jurisdiction. Under the terms of the declaration of Principles on Interim Self-Government Arrangement for Palestinians, (Decl. 1993, article 1) these negotiations should have been completed by May 1999. Eventually, this will include the entirety of Palestinian territory in the West Bank and Gaza. But unfortunately, the mutually agreed timetable called for this transfer in the transitional period has been delayed and never implemented by Israel. However, in the absence of a final peace agreement, Israel remains a military occupant in the Palestinian territories, and therefore remains bound by provisions dealing with cultural property (Oyediran 1997: 9–18) in the Hague Convention and Regulations of 1907, the Fourth Geneva Convention of 1949, and the Hague Convention and Protocol of 1954, and the UNESCO Recommendation On International Principles Applicable to Archaeological Excavations which was adopted by the UNESCO General Conference at its ninth session in New Delhi on 5 December 1956, and many other resolutions and recommendations concerning cultural property in the Palestinian occupied territories.

The Palestinian Department of Antiquities was established in a time and circumstances of complex difficulties. It possessed neither archaeological record files, nor the finds of archaeology previously undertaken on its soil. Nor did it have sufficient space, logistical support and equipment, nor an archaeological library, maps etc. And due to inadequate oppor-

tunities for field training during the occupation, the Department has inherited a serious shortage in qualified personnel.

The new situation (Balter 2000: 33–34) gives the Palestinians, who won autonomy at the end of this century, an independent role in the exploration of the history of Palestine from its primary sources, a task until recently reserved for foreign and Israeli archaeologists. This situation has often lead to the political and ideological use of these data and their interpretation without objective scientific controls. The establishment of the Department of Antiquities marks the beginning of the local field school of archaeology.

Perspective

The perspective on which the Department is basing its efforts in research, education, preservation, and legislation is basically that of the contemporary internationally accepted standards. It is the modern humanistic understanding that views the integral role of Palestinian culture within human culture, making archaeology in Palestine a scientific enterprise within the setting of international scientific endeavor. This perspective is reflected in the new draft of the Palestinian Law of Antiquities, to be approved by the Palestinian Council. The old antiquities law was grounded in a traditional concept of archaeology, which exclude the cultural heritage of the last 300 years. The new laws being invoked move beyond narrow definitions and ancient periods to include many different categories of cultural resources including archaeological sites, historical buildings and features, and significant vernacular architecture, viewed comprehensively within physical and cultural contexts.

Law of Antiquity

At its inception, the Palestinian Department of Antiquities inherited differing sets of archaeological and cultural heritage legislation. In 1929, under the British Mandate, a common legislation Law of Antiquities (no. 51) was issued which replaced the Ottoman law. Amendments followed in 1934, 1937, and 1946. After 1984, the West Bank was annexed to Jordan and the Gaza strip to Egypt, so they were operated under the antiquities laws of those two countries respectively. After the Israeli occupation of the West Bank and Gaza in 1967, Israel military government issued a series of Military orders many of which directly impacted on archaeology and the archaeological resources of the land. The most important of these was Military Order No. 119/1967, which revoked many of the principles of the old Antiquities Law No. 51 and placed all of the responsibilities of the Department of Antiquities under the military governor and his appointees. All permits and licenses issued before the June War of 1967 were thereby canceled.

These numerous sets of previous laws are generally out of date and sometimes even contradict one another. Therefore, the Department of Antiquities has worked out a draft for an updated Law of Antiquities that takes into consideration the scientific, legal and conceptual development of archaeology to the present time. This further places the archaeology of Palestine within the universe of the international discipline, and will facilitate international archaeological research based on mutual interests.

A preliminary assessment of needs and resources, undertaken by the Department of Antiquities shortly after the transfer of archaeological authority, produced a clear understanding of the amount of damage that had occurred during the occupation. Hundreds of archaeological sites have been looted and plundered, and there had been an active illegal trade in cultural property (Ilan, Dahari and Gidon 1989). Many sites were abandoned and

left without any protection. Most importantly, a lack of awareness of the importance of cultural heritage among the public, due to the heavy impact of political and ideological claims placed on archaeology by the occupiers and by the Israeli settlement policy, meant that archaeology was viewed as part of the occupational system. The new transformation in the role of archaeology is evoking a chain of positive reactions in the Palestinian society.

Immediate Tasks

The Department of Antiquities has sought ways to redress these shortcomings and to find their solutions, promoting a modern understanding of the Palestinian cultural heritage. In order to address the full range of obligations imposed by this new mandate, the Department of Antiquities has defined for itself the following primary task areas:

- Institution building of the department of Antiquities
- Formulating legislation to ensure protection of cultural resources
- Staff training to develop the necessary special capabilities within the departmental team.
- Protection, conservation and stabilization of archaeological sites
- Presentation and interpretation of archaeological sites
- Confronting the problem of illegal digging and illegal trade of cultural property
- Conducting a program of salvage excavations
- Building the museum sector in Palestine

Institutional Framework

The Departmental framework (DOA 1996) of organization has been designed to facilitate the performing of these duties. This framework consists of the following divisions:

- Excavations and Surveys
- Archives and registration
- Research Center and library
- Institute for Conservation
- Museum Department

As well as programs for training and archaeological awareness.

Salvage Excavations

The newly established Department of Antiquities has managed to undertake a series of projects during the last four years. Salvage excavations has been a major task; more than 400 salvage operations have been carried out, especially in historical urban centers and in areas under high pressure. A large number of tombs from different periods were rescued, including a Chalcolithic cave burial at Artas, an EBI tomb at Wadi Belamah near Jenin, Iron Age tombs at Beitunya, north of Jerusalem, a Hellenistic tomb at Nablus and a series of Roman-Byzantine tombs at Ta'annek, Attara, Asira-esh Shamalieh, Rammun, Bethlehem, Bani Naim, Es-Samou'a and other places. A big hoard of silver coins (421 pieces) from the early Ottoman period was uncovered in a rock shelter near the village of Qabatiyah, south of Jenin.

In the Gaza area, salvage operations were carried out on a number of sites (Sadeq 1999) including the church of Jabalia (Humbert and Abu Hassuna 1999) and the monastery of Nuseirat with its distinctive mosaics.

Preservation of Cultural heritage sites

The other major task was the development of the most endangered archaeological sites and historical buildings. This includes, the Emergency Clearance Campaign of one hundred sites 1996–1998 (Taha 1998b, 2000) and a project for the protection of cultural and historical landscape (1998–2001), funded by the Dutch government. The two projects include major archaeological sites and historical buildings, as well as historic mosques, churches, monasteries, sanctuaries, and traditional buildings. The work includes clearance work, documentation, consolidation, and conservation and salvage excavations of more than one hundred endangered archaeological sites. The sites were selected in a process that considered many criteria beyond the more obvious factors, e.g., geographical distribution, cultural diversity, historical significance and its level of preservation and endangerment. The level and type of intervention varies accordingly.

Major projects were carried out throughout the country. One of the major undertakings of this project was the clearance work (1996–1998) of the great water tunnel of Kh. Belameh (Taha 1997, Taha and van der Kooij 1999a and b). Ancient religious structures also form a vital part of the cultural heritage of Palestine through the ages. Ancient churches that had fallen into disrepair but are now being preserved and restored include churches of Burqin and Abud (Taha 1997b, 1999b), both dating to the Byzantine period, and Crusader churches of Sebastyah and el-Bireh. Historic mosques likewise being preserved include e-Sabeen and Burham from the Mamluke period, the Omari mosques of the Dura, Birzeit, as well as the sanctuaries of El-Qatrawani and maqam en-Nubani.

Illustrative of the diversity of structures and sites (Taha 1998b, 1999b) that have been preserved are a 18th century castle in Ras-Karkar, the Crusader Kahn in el-Bireh, Mamluke bath in the old town of Hebron, the Ottoman Qaem-Maqam house in Tulkarem and the Beit ez-Zarru villa in Ramallah. Maqam el-Qatrawani near Attara has been conserved and, together with the small natural forest and terraced landscape surrounding it. Similarly, the site of Dura el-Qarei focuses on the combination of ecology and historical technology, displaying ancient and traditional hydrological features in their natural and cultural landscape. Some historical buildings were restored to house ethnographic and archaeological museums or other types of cultural centers.

Larger complexes having multiple dimensions are also being stabilized and developed. Among these are villages such as Deir Istya, a unique example of 18th–19th century rural architecture, and Artas which preserves vernacular architecture together with archaeological sites of outstanding significance and a folklore museum. On an even larger scale, the historical complexes in and around the cities of Nablus and Jericho each contain Roman and medieval ruins, historical and traditional buildings. Many of these areas are being developed to include the surrounding natural and historical landscape in a coordinated master plan.

Among the well-known previously excavated sites in the West Bank and Gaza, such as Tell Ta'annek, Tell el-Fara, Tell Dothan, Tell en-Nasbeh, Tell et-Tell, Kh. Radana, and Tell el-Ajjul, some were left without protection during the thirty years of occupation. Clearance of some of these sites is being undertaken according to a master plan, which intends to

develop them into archaeological parks such as Tell Balata and the Crusader church of el-Bierh.

Bethlehem 2000

Within the framework of the Bethlehem 2000 projects, a large project for the restoration and rehabilitation of archaeological sites and historical buildings in the area of Bethlehem was carried out in cooperation with the UNDP and funded by the Japanese government (UNDP 1998). Restoration and rehabilitation work was carried out in the historic cores of the cities of Bethlehem, Beit Jala and Beit Sahour (Abu Jidi and Diab 1999: 88, el-Hasan 1999: 89, Beth 2000: 142–44). Six historic arches and parts of the city water system from the Roman and Islamic period have been restored. An ethnographic museum displaying the history of oil production was established in the old city of Bethlehem within the framework of this project.

Joint Excavations

Excellent examples of the efficiency of such international collaborations with the Department have already been demonstrated in the development projects and in the joint Palestinian-Dutch excavations at Kh. Belameh (Taha and van der Kooij 1999a and b), the joint Palestinian-Italian excavation at Tell es-Sultan in Jericho (Taha 1997a, Marchetti, Nigro and Taha 1999a, 1999b), and the Palestinian-Swedish excavation at Tell el-Ajjul and the Palestinian-French excavation at Anthedon (Humbert and Abu Hassuna 1999) and Tell es-Sakan. The joint projects at Kh. Belameh and Tell es-Sultan has contributed in building a postcolonial model of cooperation in archaeology based on mutual respect and interest.

Within this cooperative context, the project for the rehabilitation of Hisham's Palace in Jericho was established (Piccirillo 1999). The Palestinian Department of Antiquities carries out the work in cooperation with the Franciscan Archaeological Institute in Jerusalem and UNESCO and with the financial support of the Italian government (Qasr 2000). The first phase, undertaken as a training course for the staff of the Palestinian Department of Antiquities, focused on the restoration of the sirdab, the small ground bath in the central courtyard of the Palace. In the second phase work continued in the elaboration of the executive master plan for the preservation and restoration of the whole site. The mosaic workshop for the restoration of ancient mosaic was built, equipped and staffed. The workshop aims to create skilled local restorers, who will be able to intervene in the conservation of ancient mosaics.

Finally, the new born Department managed to make a successful combination between the following objectives: Protection of cultural heritage, training of young archaeologists and technical staff, and building the operational capacity of the directorate. In addition to that it was the cooperative involvement of various international and community institutions that contributed much to this achievement.

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Housing First Farmers: The Development and Evolution of Built Environments in the Neolithic of the “Hilly Flanks”

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Abstract

The portion of the “Fertile crescent” from the Euphrates River to the Zagros foothills has attracted research on the earliest steps toward agricultural society since Robert Braidwood and his colleagues targeted the region in the late 1940s. Here intensive harvesters of wild cereals and early cultivators of new domesticates embarked on a new way of living together: in villages. The development of these artificial environments and the houses within them allowed new opportunities for concealment and display, presented new ways to structure and limit person-to-person encounters, and created a new kind of social relationship: neighbours. This paper reviews changes in houses that occurred in northern Iraq and adjacent regions from the early Neolithic to the Halaf period, and what these changes may tell us about social changes over this time.

Peter Wilson (1989) argues that settling in villages, beginning in the Epipalaeolithic but especially in the Neolithic, represented a revolutionary social, intellectual, and psychological break with the past. While most archaeologists have focused on economy and plant and animal domestication, he focuses on the social and cosmological impacts of this change. Similarly, Ian Hodder (1990) argues for a new distinction between the *domus* and the *agrios*, the cultural and the wild, in southeast Europe about this time.

The new villagers developed very different concepts of privacy, property and social distance. Villages offered very different opportunities for interaction, including conflict, and different ways of avoiding or resolving conflicts. In what Wilson calls Open Societies—nomadic hunter-gatherers—conflict is resolved by splitting the group. In what he calls Domestic Societies, the barriers of walls help to control or avoid conflict-prone interactions, and conflicts are resolved with judges, bloodwealth, or fines. Walls, streets, and doors are constructed, in part, under the influence of social systems but, once they are built, they also structure encounters and thus, in turn, affect social systems.

However, this new concept of built environment was not static either, and provides us an opportunity to infer at least some aspects of social changes related to the use of space.

Here I will necessarily only make a brief overview of some of the changes from the early Neolithic (ca. 10,500 BC) to the Halaf period (ca. 5000 BC)¹, with a few examples from sites

1. Calibrated (calendar) years, not radiocarbon years.

whose architectural remains provide evidence for the differentiation and “connectedness” of space.

Space and readability preclude detailed discussion of methods or presentation of equations. Many methods I use are borrowed from the “space syntax” of Hillier and Hanson (1984). Briefly, we can characterize spatial relationships as symmetric or asymmetric. Asymmetry occurs whenever one space controls access to another space. They can also be distributed, meaning that there are circuits, or more than one route between spaces, or they can be non-distributed, with only paths and branching, tree-like routes.

We can graph the relationships to show the depth of spaces relative to one space, such as the outside of a house or its courtyard, depth being defined by the number of intervening doorways through which one must pass. Some of the measurements that quantify the spatial integration of spaces are based on mean depth. Relative Asymmetry (RA) standardizes this as a ratio to the maximum depth possible, which occurs when there is a path (all paths have $RA = 1.0$).

Such methods are not always practical in archaeological contexts. If walls and doorways are inconsistently preserved, or not preserved at all, it may be impossible to determine the form of spatial organization. Fortunately the stone and mud-brick architecture of the ancient Near East is often remarkably well preserved. Even though we can rarely be certain that we are not missing any doorways or other access points, we can to some extent account for these with a range of error. We also benefit from the fact that vernacular architecture within particular villages often follows a rather standard plan and, where we find such consistency in ancient Near Eastern sites, we can often make reasonable assumptions in reconstructing walls and doorways.

Changes in Domestic Architecture

The earliest village settlements in the Zagros-Taurus region, such as Qermez Dere (Watkins 1995; Watkins et al. 1991) and Nemrik 9 (Kozłowski 1990; Kozłowski and Kempisty 1990), show relatively simple differentiation of space (Fig. 1). There are oval or subrectangular, one-room pit houses with plaster floors, sometimes differentiated somewhat by one or two pairs of clay piers that may be the bases of posts that supported the roof.² Such buildings are scattered in their settlements, probably not at all randomly, yet without a formal spatial structure beyond a simple one that Hillier and Hanson (1984) would liken to a cloud of midges or mosquitoes. With areas on the order of 12 to 25 m², these structures probably housed nuclear families, and many, perhaps even most, activities took place outside in full view. Yet house interiors still provided some opportunity for concealment, including hoarding. Wilson (1989: 136–145) argues that the jealousy and suspicion that such concealment encouraged, along with increases in mortality and morbidity associated with sedentism, led to the concept of witchcraft.

2. T. Watkins (personal comm., 26 May, 2000) disputes identification of these as sockets or bases for posts on the grounds that they have finished top surfaces and appear not strong enough to bear weight. However, the closely similar piers at Nemrik 9 are just as strongly identified as post supports (Kozłowski and Kempisty 1990). In both sites there is a raised, flat boss on the top of some piers that could be designed to support the flat end of a wooden post. They seem better able to bear weight than are the flimsy walls of the pit houses themselves. They are also analogous in form and location to roof supports in PPNB houses in the Levant.

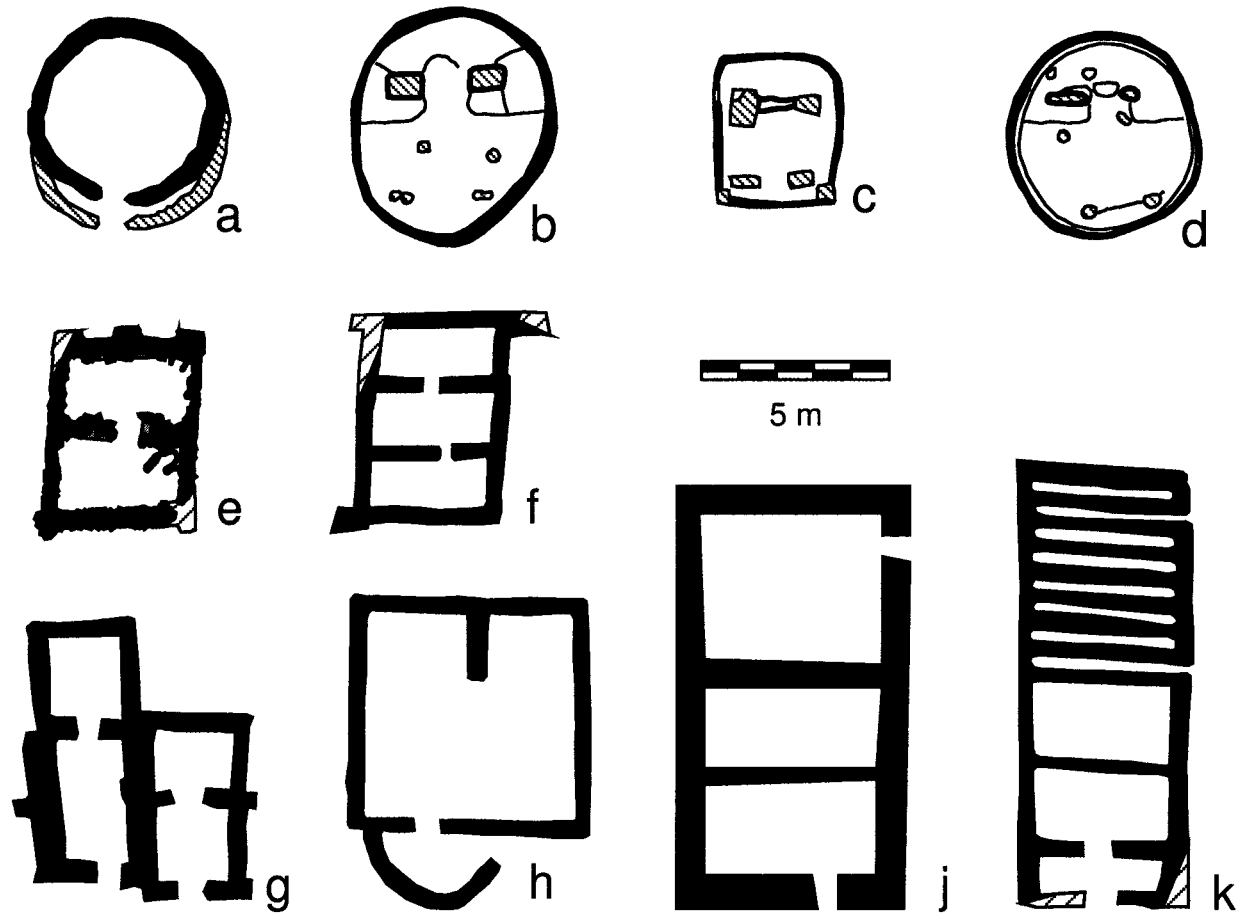


FIGURE 1. One-room and “megaron” structures with simple paths and $RA = 1$ (measured from outside house): (a) Halan Çemi, (b-d) Nemrik 9, (e-f) Cafer Hüyük, (g) Umm Dabaghiyah, (h) Hajji Firuz Tepe, (j) Bouqras, and (k) Çayönü (after Rosenberg et al. 1995; Kozłowski and Kempisty 1990; Cauvin 1989; Kirkbride 1975; Voigt 1983; Akkermans et al. 1983; and Özdoğan and Özdoğan 1989).

In some ways these buildings are similar to the earliest round and rectangular houses of the Pre-Pottery Neolithic A and Middle Pre-Pottery Neolithic B in the Levant, where single-cell pithouses gave way to simple rectangular buildings with piers and posts.

In both the Levant and the Taurus-Zagros region, internal walls soon replaced the piers or posts. In both cases, the result was a megaron-like building, some 18 to 30 m² in area, with two or three rooms in a simple path, as at Cafer Hüyük, and some of the buildings at Bouqras and, a little later, Umm Dabaghiyah (Fig. 1). Even the “grill-plan” buildings of Çayönü sometimes show the simple megaron-like set of rooms at one end of the grill (Fig. 1k). The “grill” is probably a platform, perhaps meant for drying, as in later Hassuna sites (see below), although other interpretations are possible. These megaron plans are almost identical in size and shape to the “pier houses” of the Levant (see Banning and Byrd 1987; Byrd and Banning 1988).

But in the Zagros-Taurus region, space became differentiated more rapidly and more markedly than in most of the Levant. In some sites of the Aceramic and early Ceramic Neolithic, such as Tell Maghzaliyah (Bader 1993a) and Nevalı Çori (Hauptmann 1993), differentiation took the form of complex “cell plans.” Often the cells are organized on a 3 x 3 grid or in pairs of parallel rooms, possibly a result of the way buildings were spanned by roof

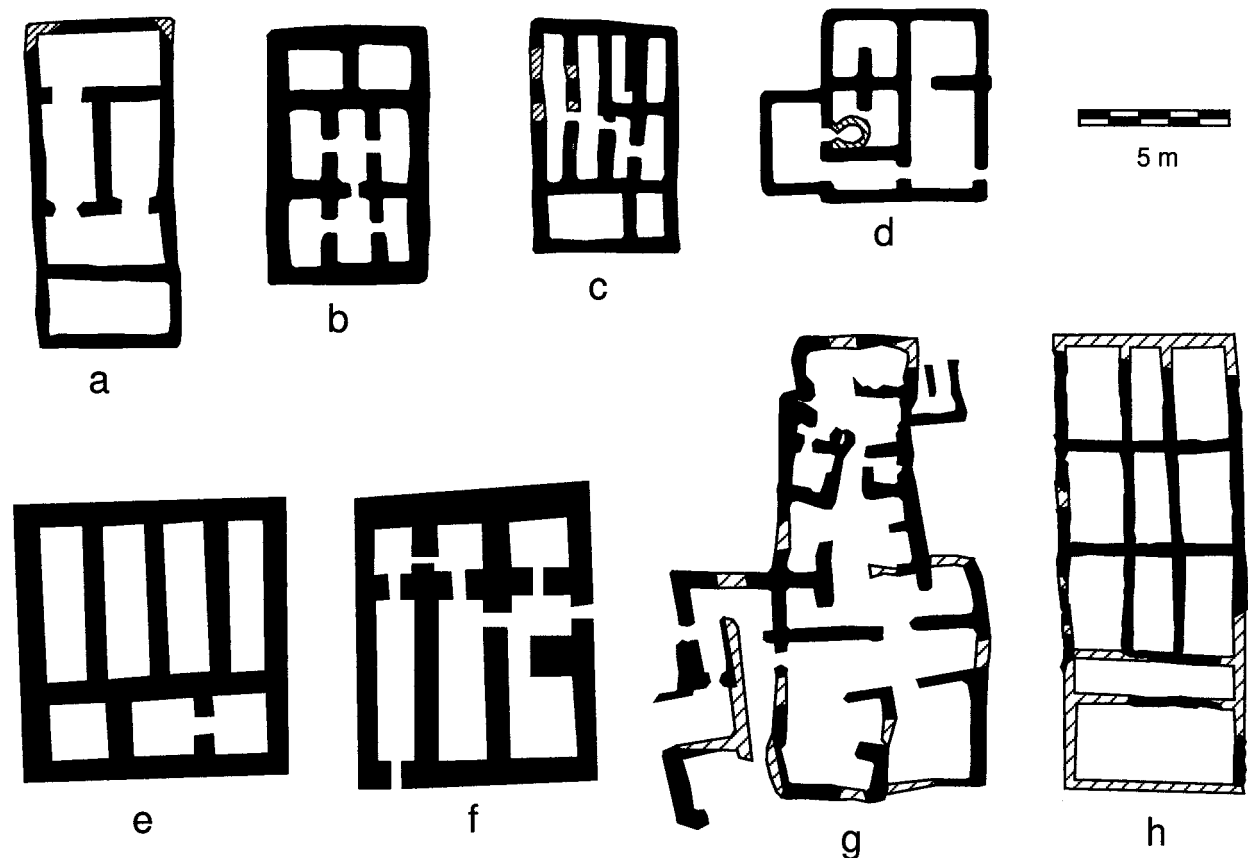


FIGURE 2. Cell-plan and other complex structures with tree-like spatial structures and RA from outside about 0.5: (a) Abu Hureyra, (b-c) Çayönü, (d) Jarmo, (e-f) Bouqras, (g) Umm Dabaghiyah, and (h) Nevali Çori (after Moore 1981; Özdoğan and Özdoğan 1989; Braidwood and Howe 1960; Akkermans et al. 1983; Kirkbride 1975; and Hauptmann 1993).

beams. Average room size decreases to 4 to 5 m². In most of the excavated sample, the evidence for doorways is not preserved, but where we do have evidence the system of circulation appears to have been branching, with greater depth from the outside than in the megaron structures (Fig. 2). This lowers RA to around 0.25, yet maintains a high degree of control over access to the “deeper” rooms of each structure.

At sites where preservation and excavated exposure are particularly good, as at Bouqras on the Euphrates, spatial organization is tree-like, sometimes with a single circuit created by having two separate entrances to the house. This creates greater integration of spaces, but also greater control of access to particular spaces, such as storage rooms and stairs to upper floors (Fig. 2f; Akkermans et al. 1981; 1983). These houses are also much bigger, on the order of 50 to 70 m² on the ground floor alone. Other houses are more modest, yet still have cell-like spatial differentiation and tree-like organization.

Proto-Hassunan and Hassunan sites (ca. 7000–6000 BC) sometimes combine single-room, path-like or even megaron-like houses with large cell buildings that we might reasonably associate with communal storage at an unprecedented scale, as at Umm Dabaghiyah and Yarim Tepe I (Kirkbride 1973; 1975; Merpert and Munchaev 1993a). The buildings are reminiscent of pueblos in the American Southwest as well as Old Kingdom Egyptian granaries and, whether cells were accessible from a central hallway or only from

above, they are organized by a non-distributed space syntax in a shallow tree structure. This means that one highly integrating space controls access to many, in this case less integrated, spaces. Most likely this is related to a redistributive economy with some form of hierarchical socio-political organization. Quite often, the barrack-like building blocks enclose a plaza-like space, possibly indicating a concern to protect the stores, or at least to control access to them. The result, in terms of Hillier and Hanson's (1984) syntaxes, is a very complex distributed one dominated by z_5 : groups of cells enclose a space. The houses in such sites, however, are one-room, cell-plan or megaron-plan structures, ranging considerably in size (e.g., Figs. 1g and 2g). While most of these are rectangular, a few round structures at most sites anticipate the *tholoi* of Halaf sites.

Samarran sites, which appear to overlap in date with both Hassunan and early Halaf ones (ca. 5900 BC), display other interesting facets of spatial organization. Tell as-Sawwan (Abu es-Soof 1968; 1971; al-'Adami 1968; Breniquet 1991; Wahida 1967; el-Wailly and Abu es-Soof 1965; Youkhana 1986) provides a particularly good example. Its Tripartite Buildings have non-distributed tree structure and very standardized anatomical parts (Fig. 3). The later T-shaped buildings, in spite of their different shape, retain most of the anatomical parts—the three long rooms, the megaron, the courtyard, the string of three small cells—found in the Tripartite Buildings. Possibly other parts occurred on the upper floor. They also retain the tree-structure, which remains nearly constant from house to house even when doorways are in completely different sides of the house. Interestingly, the position of doorways appears to facilitate communication between closely related households, while the megaron is always “shallow” in the system—close to the entrance—and isolated from most of the house, perhaps for use to entertain guests. Notably, the interior courtyard and relatively large size of these houses would have allowed most domestic activities to occur away from public view, quite unlike the situation in the earlier Neolithic.

At a larger scale, Tell as-Sawwan has a surrounding ditch, replaced by a wall in its T-house phases, that channels outsiders into something like a plaza. Measures of spatial integration show that spaces in the western side of the settlement are more integrated and accessible, while the rest, where most of the houses are, shows strong control over access. The more public side also has higher proportions of fine wares and almost all human burials come from a house on the plaza's edge. Interestingly, most of the structures within the wall were converted into large granaries toward the end of the period, again indicating controlled access to communal storage.

Most Late Neolithic sites do not provide such wonderful exposures as Tell as-Sawwan, but there are hints, as Breniquet (1991) has noted, that closely similar architecture occurs at roughly contemporary sites, such as Kültepe and Matarrah (Bader 1993c; Braidwood et al. 1952). There is also considerable continuity with 'Ubaid sites.

Halaf sites, the earliest of which are contemporary with sites like Tell as-Sawwan, are most notable for their returning emphasis on round structures, or *tholoi*, yet their settlements nonetheless show highly differentiated space (Fig. 4). Although similar in size at about 20 m², these are in many respects very different from early settlements of round structures at Nemrik 9 or Qermez Dere and, in any case, usually show a combination of round and rectilinear architecture. The well preserved examples from Tell Sabi Abyad (Akkermans and Verhoeven 1995; Verhoeven 1999), in fact, indicate that most of the domestic space occurred in one- or two-storied rectangular buildings with complex cell-plans and quite large floor areas. The smaller *tholos* structures stood outside of these or in courtyards, show internal subdivisions, and probably had a variety of domestic and rural functions. Interestingly,

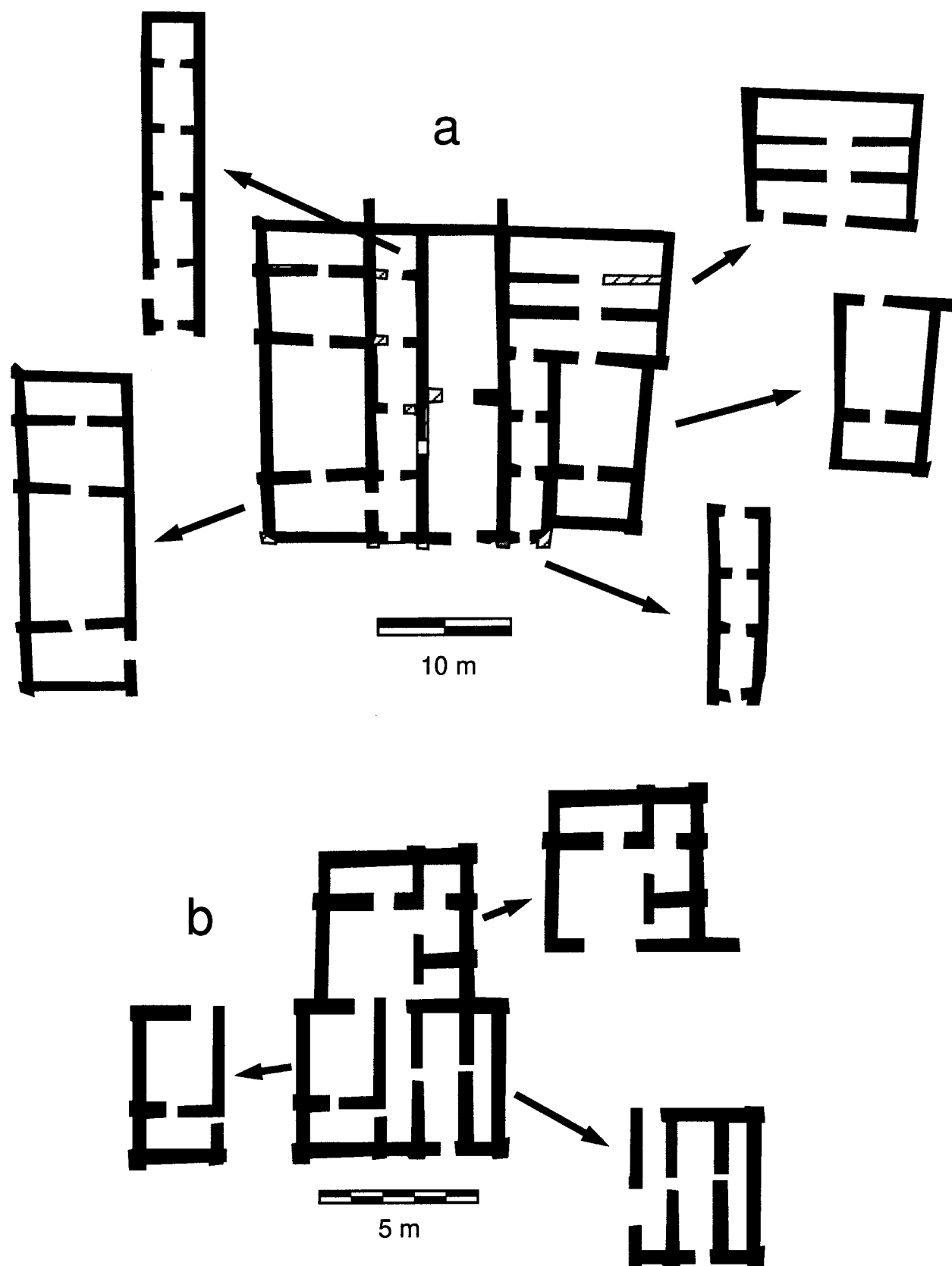


FIGURE 3. Anatomy of Samarran Tripartite (a) and T-shaped (b) buildings from Tell as-Sawwan (cf. Forest 1983; Kubba 1987; Margeraud 1989).

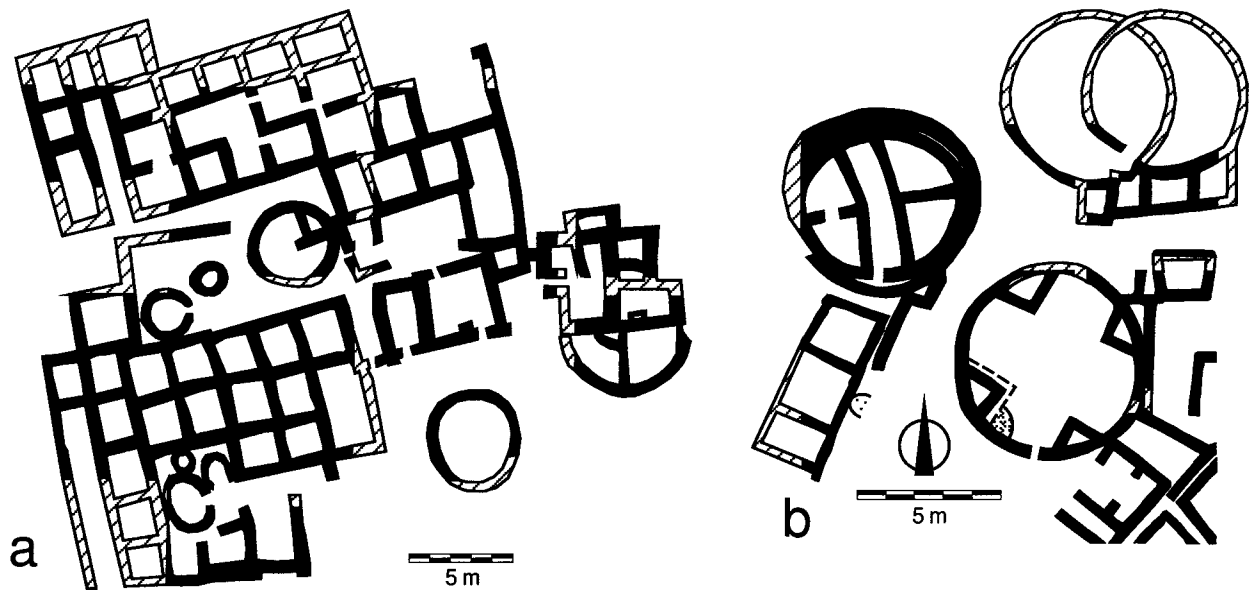


FIGURE 4. Plans of Halaf buildings in (a) level 6 at Tell Sabi Abyad and (b) level 3 at Yarim Tepe III, with reconstructed walls hatched. Note that scales differ, and there is some overlap of structures (after Verhoeven 1999; Merpert and Munchaev 1993c).

the *tholoi* are often highly accessible within the settlement, making them rather poor candidates for private storage areas, although others are enclosed in courtyards. At Yarim Tepe II and III (Merpert and Munchaev 1993b; 1993c), the *tholoi* are more clearly the principal residential structures, yet have many internal subdivisions and are associated with rectangular, multi-room outbuildings and annexes. As some of these subdivisions are probably storage facilities, this perhaps shows a return to household-controlled, rather than communal, storage. Although it is not clear what led to an increasing preference for circular (possibly domed) houses in some Halaf sites, scarcity of roof timbers could have been a factor.

Conclusions

Although it is difficult to generalize about so varied a sample of sites, one major pattern emerges, especially in contrast to the Levant. There, even though spatial differentiation increased up to Pre-Pottery Neolithic C, it then rapidly declined again. In the part of the Near East with which this paper is concerned, however, spatial differentiation more rapidly increased and, for the most part, remained high thereafter.

As noted in the case of some Hassunan and Samarran sites, the most spectacular compartmentalization occurred in what seem to have been specialized, communal storage buildings. Hunter-Anderson (1977) has noted that storage of undifferentiated or homogeneous, low-value goods, such as grain, usually involves cylindrical or spherical containers, such as silos or pots, without internal subdivision. Usually the only incentive to build subdivided, rectangular containers is the need for organization of heterogeneous contents. In the case of large, multicellular buildings like those at Umm Dabaghiyah and Yarim Tepe I, it is possible that such heterogeneity involved different crops or other goods that needed to be kept separate, or possibly crops belonging to different households in the community. It is also possible that the compartmentalization was a precaution against spoilage. Pests that pene-

trate a large, undifferentiated silo can ruin the whole contents, but pests invading Umm Dabaghiyah or Yarim Tepe might contaminate only some of the cells. The scale of these storage facilities suggests a superhousehold level of organization. Their spatial arrangement, meanwhile, suggests that this organization was hierarchical, with levels of access to central courtyards, individual cell-buildings, and individual cells within those buildings.

Where the houses are concerned, we might also follow Hunter-Anderson (1977) in suggesting that, in the Taurus-Zagros region, buildings increasingly analogous to chests of drawers, tool boxes, or tackle boxes are related to increases in the heterogeneity of roles and activities in households.

In particular, where there are simultaneous, complex tasks (see Wilk and Rathje 1982), there are benefits to highly differentiated, rectilinear spaces, which prevent the tasks from interfering with each other. Task simultaneity occurs, for example, when several resources become available and need to be harvested and processed in a short time. Complex tasks are those that cannot be broken down into a sequence of operations that one person could carry out, but require two or more people to work in concert. Both simultaneous and complex tasks can lead to larger households because they have greater demands for labour (Banning 1996). In greater Mesopotamia, and especially wherever irrigation agriculture was practiced, as in parts of the Samarran sphere, a larger labour pool would allow some households to weather agricultural risks more easily and give them better opportunity to acquire wealth—another of the traits Wilson (1989) associates exclusively with Domesticated Societies.

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From Pre-Halaf to Halaf—The Changing Human Environment in the Khabur Headwaters, Northeastern Syria

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Abstract

The Late Neolithic period in Syria and northern Mesopotamia (ca. 6900–5300 B.C.) is characterized by the spread of the Hassuna, Samarra and Halaf cultural traditions. Previously seen as largely discrete cultures, recent archaeological research in Syria and northern Iraq has shown that the Halaf arose gradually in these regions during a Hassuna/Samarra ‘influenced’ stage. Ever since Max Mallowan’s pioneering work, we know that the Khabur area of northeastern Syria was used intensively in prehistoric times, but research on the Late Neolithic period has been limited. In this contribution we shall discuss recent survey work in the area as well as some preliminary results from rescue excavations at a Late Neolithic village—two projects that provide new information on the regional transition to the Halaf.

Introduction

A major theme in recent prehistoric research in Syria and northern Mesopotamia focuses on an old question: the so-called “origins” of the Halaf culture. Traditionally, the relationships between the Halaf and other Late Neolithic cultures, the Hassuna and the Samarra cultures, were perceived as a sharp break. This led a number of scholars to argue that the introduction and subsequent spread of the Halaf must have been the result of population growth or population movements (e.g., Davidson 1977; Mellaart 1975). However, recent research in the Balikh valley of Syria and in the northern Iraqi *Jezirah* now clearly shows that the rise of the Halaf can no longer be seen as an abrupt break in material culture. In these regions, it now appears that the Halaf tradition arose gradually during a “transitional” stage. Within a comparatively short time, between ca. 6100–5900 cal B.C., the local cultural traditions in these two regions gradually became very similar to each other. During this ‘transition’, the pottery shows strong Hassuna and Samarra “influences”. The various pottery groups attested at this time show increasingly large regional distributions, as the vast expanses of steppe of the Syrian and northern Iraqi *Jezirah* became the scene of more and more intensive social interaction (Akkermans 1993; 1997; Akkermans and LeMière 1992; Akkermans and Verhoeven 1995; Campbell 1992; 1997; LeMière and Nieuwenhuyse 1996). During the Hassuna/Samarra stage, the human environment was altered significantly.

The Khabur basin of northeastern Syria occupies an intermediate position between the two regions just mentioned. Ever since Max Mallowan’s pioneering research, we know that

the area was used intensively in prehistoric times. Nevertheless, our basic archaeological evidence regarding Late Neolithic patterns of settlement is still highly restricted. This unhappy situation is now being adjusted, as a series of recent archaeological fieldwork projects are concentrating specifically upon the Late Neolithic period. We shall discuss two such recent fieldwork projects. Firstly, the recent survey by Lyonnet (Lyonnet 2000) has provided new insights in human settlement from the Proto-Hassuna to the Early Halaf period (LeMière 2000; Nieuwenhuyse 2000). Secondly, the recent salvage excavations by Suleiman at Tell Boueid II (Suleiman 1995; Suleiman and Nieuwenhuyse 1999a; 1999b; Suleiman and Nieuwenhuyse n.d.) give a vivid picture of a Late Neolithic village that was occupied during precisely this period.

Early Halaf Settlement in the Khabur

The Lyonnet survey aimed to investigate patterns of human settlement in the Khabur area, from the earliest traces of human occupation until present times (Lyonnet 2000: 6). With respect to the Late Neolithic period, of course, there had been numerous previous survey projects (e.g., Mallowan 1936; Davidson 1977; Eidem and Warburton 1996; Meijer 1986, among others). These projects suggested a strong presence of Halaf settlements. This impression was dramatically supported by the present project: more than half of all of the sites included in the survey yielded Halafian pottery (Nieuwenhuyse 2000: 180). In comparison with the restricted evidence of sites during the Proto-Hassuna period (LeMière 2000), this amounted to an enormous increase in the number of sedentary settlements. Here we shall be largely concerned with the earliest stages, the Early Halaf and the presumably “Transitional” stage; those interested in developments during later stages of the Halaf period or preceding the Halaf period we refer to the published volume (LeMière 2000; Nishiaki 2000; Nieuwenhuyse 2000).

The large number of Halaf sites ($n = 40$, in a total of 62 sites included in the survey) is certainly misleading, as it might suggest a high number of villages throughout the Halaf period. It is evident that this was not the case. If we distinguish according to sub-phase, the number of sites decreases rapidly, especially for the earliest stages. Between eight and fourteen sites may have occupation dated to a transitional stage between the Proto-Hassuna and the Early Halaf (Fig. 1). Absolute site densities are difficult to reconstruct on the basis of the present survey, but if seen in a relative way the survey indicates an increase in sites at this time (Nieuwenhuyse 2000: 184). In comparison, using similar survey methodologies, the Proto-Hassuna stage yielded only six sites (LeMière 2000).

Site locations indicate a preference for the northern parts of the survey area, north of the present-day boundary of 220 mm average annual rainfall. This corresponds to similar preferences for northern site locations seen in the Balikh valley (Akkermans 1993),¹ and is thought to reflect a reliance on mixed farming and animal husbandry (Cavallo 2000). This general tendency, however, is certainly not absolute. This is made clear by the geographical position of contemporaneous Tell Boueid II, situated further south along the Middle Khabur (see below).

Generally, the villages are small to very small. Most sites have a surface of less than 0.5 hectare. A restricted number of larger sites are found, within the size range of 1–3 hectare. Only a single site in the survey, site KS 70 (Tell Nisibin), may have reached a size of about 5 hectares during this period. If so, it would represent the largest site known thus far from this period in the area, but the evidence is not conclusive (Nieuwenhuyse 2000: 185). In

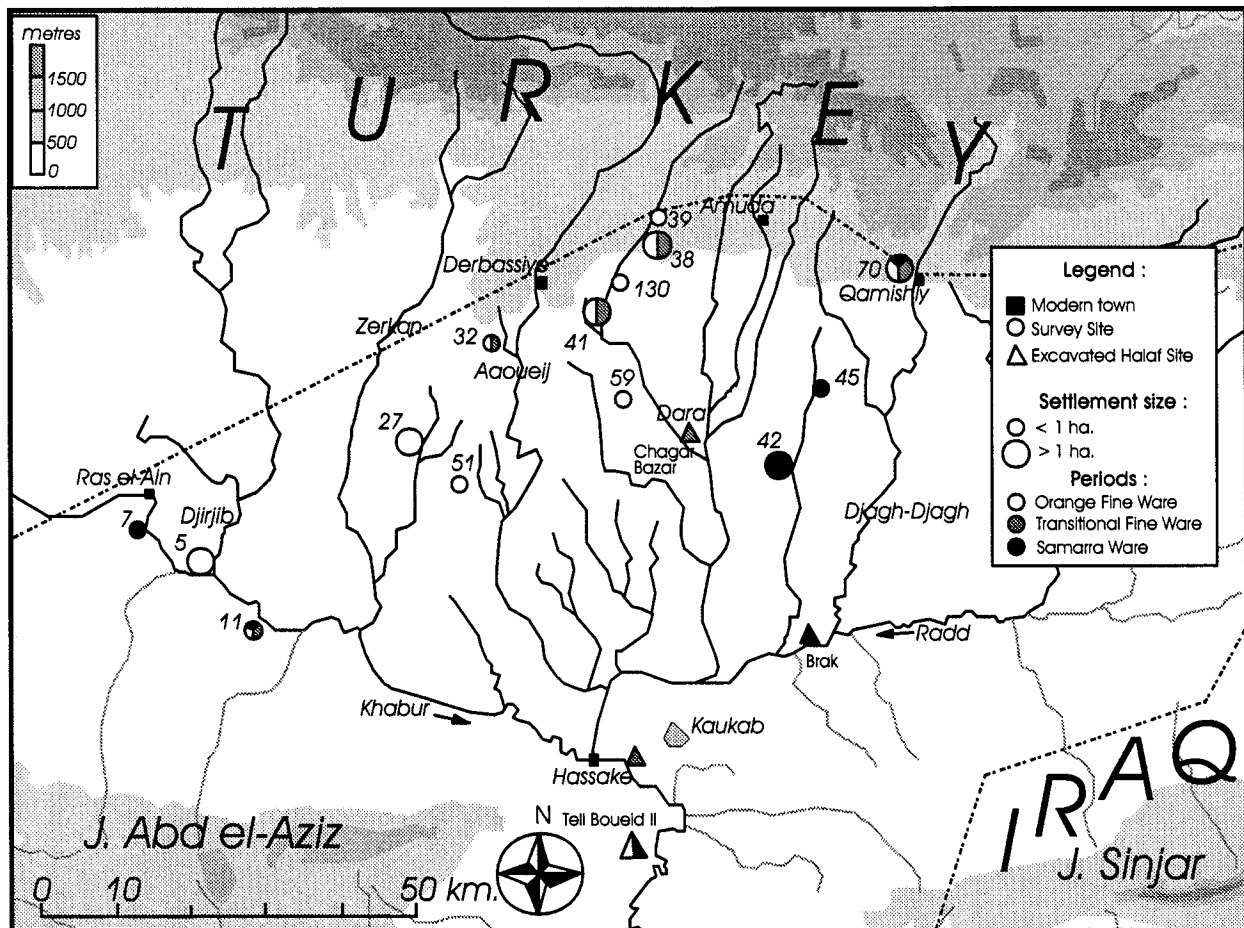


FIGURE 1. The Khabur survey. Transitional period settlement. Made by Martin Sauvage, EPHE, IV^e Section et UPR 193 du CNRS. Adapted by Olivier Nieuwenhuyse, National Museum of Antiquities.

terms of settlement size, the survey indicates a very weakly developed hierarchy (Fig. 3). This pattern is not unlike patterns attested in the Balikh valley (Akkermans 1993: 196) and in the northern Iraqi *Jezirah* (Campbell 1992: 118–120).

During the Early Halaf period the number of sites increases. Fourteen sites have been dated to the Early Halaf period (Nieuwenhuyse 2000: 186). This includes the excavated site of Tell Aqab (Davidson 1977).² Site location preferences, however, may change little. As in the previous stage, villages still tend to be situated in the northern, rain-fed parts of the steppe (Fig. 2).

The settlement size hierarchy at this stage shows a pattern very similar to that observed in the previous stage. Most villages are still small to very small, with a size of less than a single hectare. Some larger sites have been found as well, with a size of between 1–3 hectare (Fig. 3). A single site covers an area of about 5 hectares, KS 70 (Tell Nisibin). Although at this time Tell Nisibin stands out more strongly than before as a major regional centre, the Early Halaf is still characterized by a very weakly developed settlement hierarchy. On the basis of the settlement size distributions, a two-tiered hierarchy may perhaps be postulated (Fig. 4).

Throughout the Transitional and Early Halaf periods, the pattern of settlement shares many resemblances, which indicates a strong sense of continuity. In fact, many Early Halaf

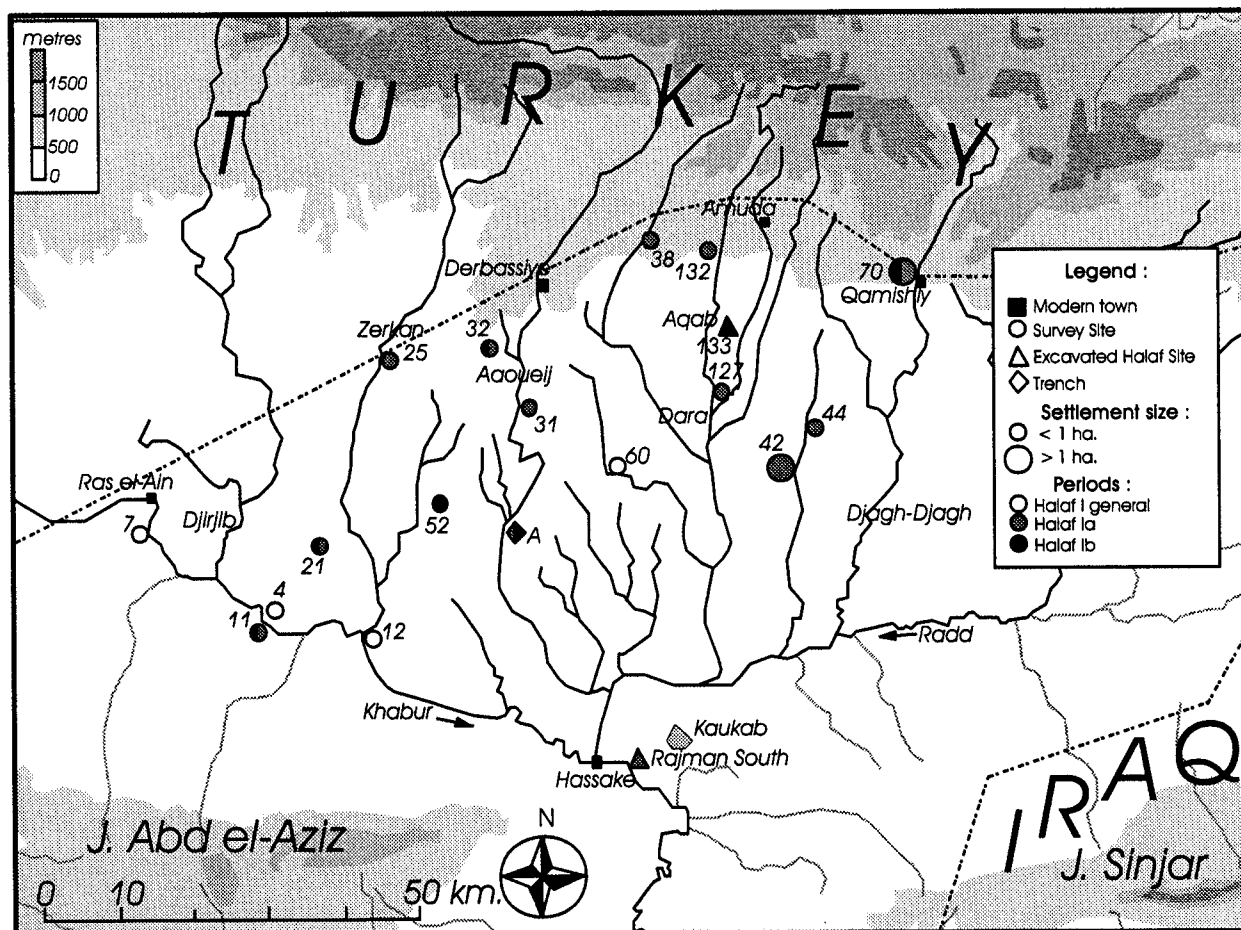


FIGURE 2. The Khabur survey. Early Halaf period settlement. Made by Martin Sauvage, EPHE, IV^e Section et UPR 193 du CNRS. Adapted by Olivier Nieuwenhuyse, National Museum of Antiquities.

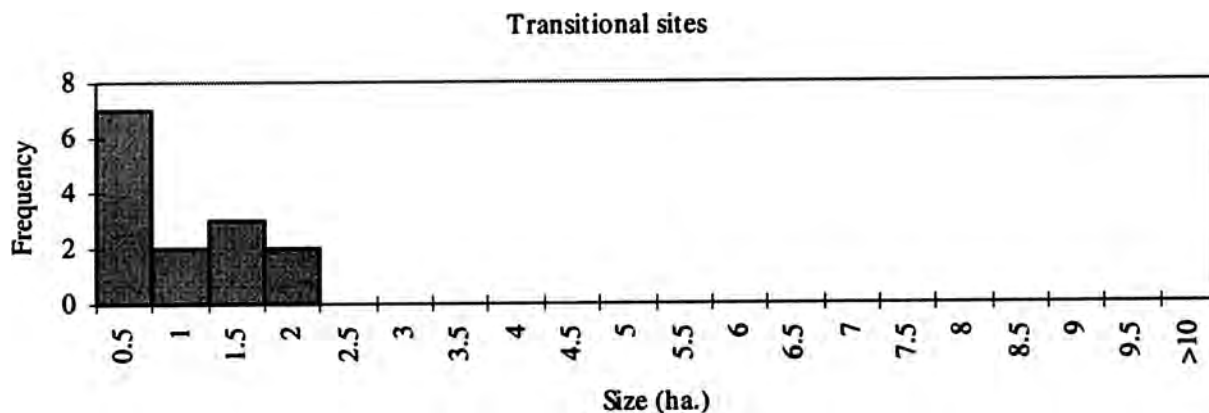


FIGURE 3. The Khabur survey. Size of the Transitional period sites.

sites were also occupied during the preceding Transitional period (Nieuwenhuyse 2000: 186, Table 31). Marked changes in settlement took place largely *after* the early Halaf period. During the Middle-Late Halaf period, settlement numbers in the Khabur headwaters increased significantly, and a much stronger settlement hierarchy is demonstrated. Throughout the Halaf period, Tell Nisibin remains the largest Halaf site currently known in the

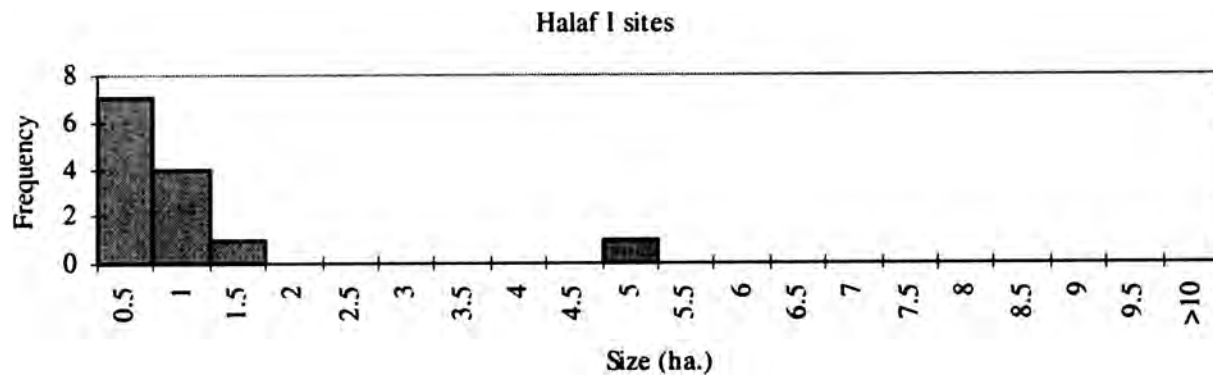


FIGURE 4. The Khabur survey. Size of the Early Halaf period sites.

Khabur area, growing to a size of approximately 17 hectares at the end of the Halaf period (Nieuwenhuyse 2000: 188–189).

The Late Neolithic sites discussed so far were dated to the “Transitional” and Early Halaf periods on the basis of strong similarities of the surface pottery with the ceramics excavated at Tell Sabi Abyad (Akkermans 1989; 1993; LeMière and Nieuwenhuyse 1996; Nieuwenhuyse 1995; 1996b; 1997a; 1997b). Three pottery groups in particular are of significance here: so-called *Orange Fine Ware*, *Samarra Fine Ware* and *Halaf Fine Ware*.

The Early Halaf Fine Ware pottery collected in the survey is identical to the Halaf Fine Ware retrieved from levels 1–3 at Tell Sabi Abyad (LeMière and Nieuwenhuyse 1996: 178–184). The vessels are painted with dark brown or black mat paint on a light surface colour, and show characteristic Early Halaf design patterns. Archetypal Early Halaf vessels include low, carinated bowls and small cream bowls, always painted with horizontal crosshatching (Figs. 6: 4–5, 6–7, respectively). The work at Tell Sabi Abyad makes it clear that this pottery represents a direct outgrowth of the Samarra-related so-called Standard Fine Ware. As at Tell Sabi Abyad, a number of vessels retrieved from the survey combine a Halaf-like ceramic technology with vessel shapes and types of decoration that we may date to the Transitional stage (Fig. 6: 1–2). The other two pottery groups, Orange Fine Ware and Samarra Fine Ware, are characteristic for the Transitional period at Tell Sabi Abyad (LeMière and Nieuwenhuyse 1996: 161–170). Since they occur in excavated context at the site of Tell Boueid II, we shall discuss them below.

The Late Neolithic village at Tell Boueid II

A number of excavations in the Khabur headwaters have examined Proto-Hassuna villages (Matsutani 1991; Munchaev and Merpert 1994), while the soundings at Tell Aqab exposed Early Halaf strata (Davidson 1977). However, apart from Mallowan’s trenches at Tell Chagar Bazar, no excavated site in the Khabur headwaters thus far represented the period between the Proto-Hassuna and the Early Halaf. For this reason, the rescue excavations carried out between 1997–1998 out at the site of Tell Boueid II are most welcome (Suleiman 1995, Suleiman and Nieuwenhuyse 1999a, 1999b, Suleiman and Nieuwenhuyse n.d.).³

The small mound of Tell Boueid II lies along the right bank of the Middle-Khabur river, south of the modern town of Hassake. The area is currently submerged by the flooding of the Khabur lake. Barely visible unless from a very close distance, Tell Boueid II has yielded the

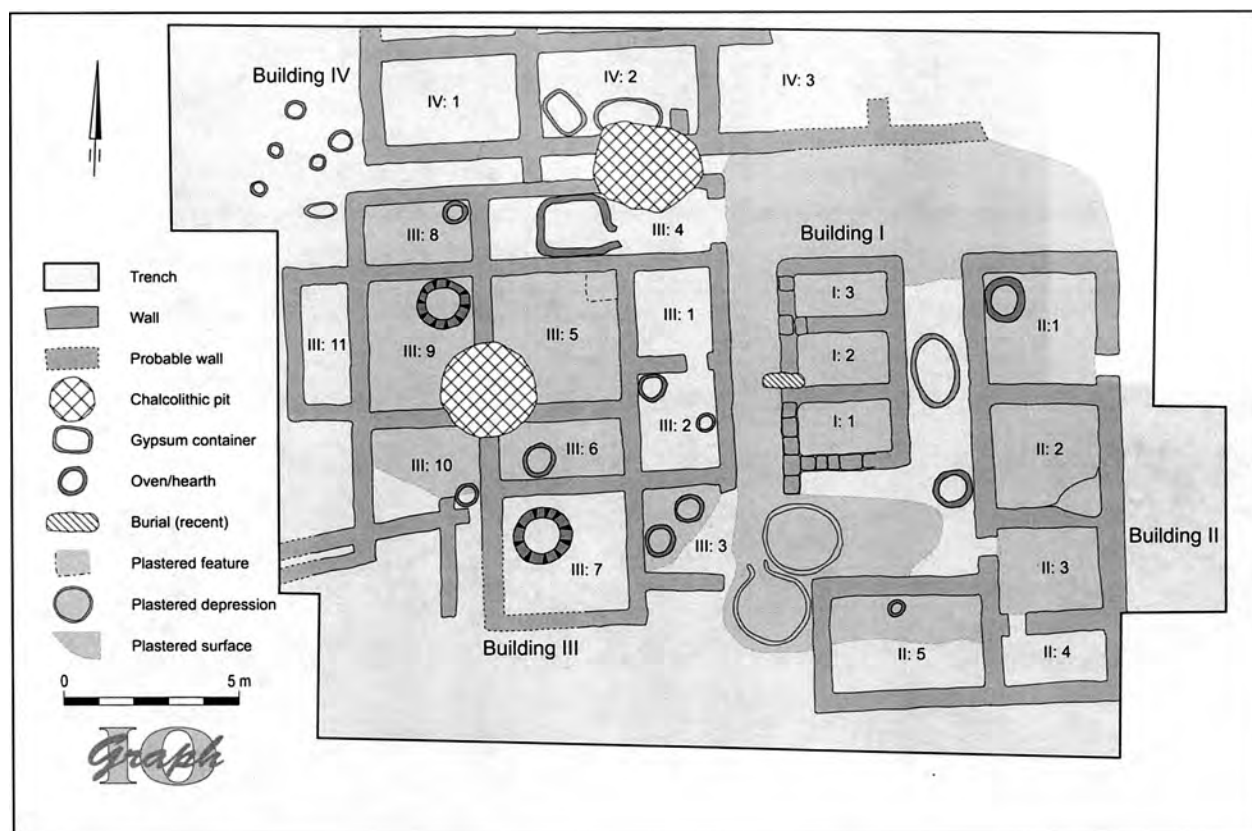
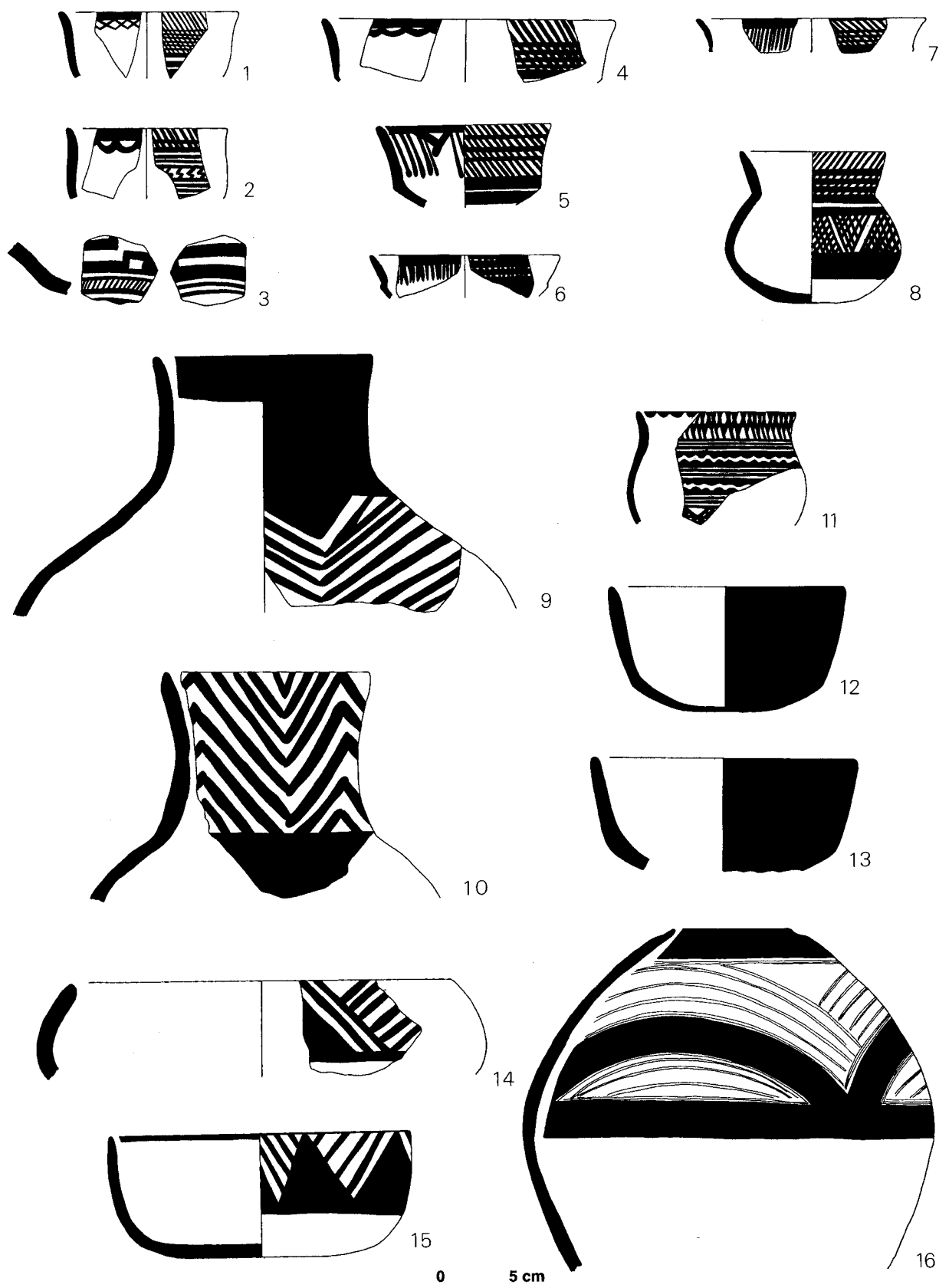


FIGURE 5. The Late Neolithic village at Tell Boueid II (after Suleiman and Nieuwenhuyse n.d.)

remains of a small Late Neolithic village. On the basis of the ceramics, the village is dated to the Hassuna/Samarra period. The location of the site is in a rather marginal area, which today is not well-suited for dry farming. In Late Neolithic times the area was not densely populated. In addition to Tell Boueid II, the only other Late Neolithic site is the Middle-Late Halaf village at Tell Umm Qseir, which lies on the opposite side of the river some 5 km to the northeast (Hole and Johnson 1987; Tsuneki and Miyake 1998). At present, Tell Boueid II is the earliest village known in the Middle Khabur, as well as the southernmost Late Neolithic site currently known in the whole of the Khabur basin. Much further to the south, its closest neighbours include the Euphrates sites of Tell Bouqras and Tell Baghouz.

With a size of less than half a hectare (ca. 0.2 hectare), Tell Boueid II may be seen as the smaller counterpart of the larger villages situated in the less marginal parts of the steppe, such as Tell Sabi Abyad or Yarim Tepe I. The lay-out of the village parallels that of the larger villages to some extent. The excavated remains show a concentration of square and rectangular rooms of varying size. Perhaps a number of multi-roomed buildings may be distinguished, here termed “building 1” to “building 4” (Fig. 5). Ovens are found in many of the rooms. Interior floors were frequently plastered. Interestingly, plaster was also applied to exterior surfaces; samples taken from these exterior surfaces indicate that the exterior plaster is a form of gypsum (for a more detailed presentation see Suleiman in press).

In terms of its material culture, Tell Boueid II closely matches the picture gained from other Late Neolithic sites in the *Jezirah*. A range of domestic artefacts has been found on the site. Following the large numbers of pottery vessels, ground-stone tools represent the most common find. These were used for the processing of foodstuffs and other products. Pestles



Orange Fine Ware; nos. 1–3, 11: Samarra Fine Ware/Standard Fine Ware, nos. 4–8: Early Halaf Fine Ware; nos. 14–15: Standard Ware; no. 16: Dark-Faced Burnished Ware. (scale 1: 4).

and mortars occur in various shapes and sizes. As is usual with such ground-stone objects, most of them have been made of basalt. More delicate stone objects are also found occasionally, and include some labrets and a polished stone bowl with an incised decoration (Suleiman and Nieuwenhuyse 1999a: Fig. 1: 8–11; for more precise descriptions see Suleiman and Nieuwenhuyse n.d. chapter 3). The lithic industry, consisting mostly of obsidian, shows some unique features. Obsidian tools include a large proportion of so-called side-blow blade-flakes (Nishiaki n.d.).

Of special interest is the evidence for administrative practices taking place at Tell Boueid II. Two clay sealings were found, each showing rounded stamp-seal impressions. The iconography of the seal impressions shows strong similarities to the sealings retrieved from the Burnt Village at Tell Sabi Abyad (Duistermaat n.d.). Another tool that may be related to administrative practices is presented by a series of flat, oval shaped discs made of gypsum. Although they have not been marked with seal impressions, they resemble sealed discs or lids of similar shape found at other Late Neolithic sites in Syria such as Tell Sabi Abyad or Tell el-Kherkh. The discs all have one rounded, convex side, and one flat surface which in most cases shows a crossed string impression (Suleiman and Nieuwenhuyse 1999a: Fig. 1: 12). The gypsum discs may have been used to seal containers that were closed with rope. The fact that such sealing practices took place at Tell Boueid II in this period is in itself not surprising, considering the abundant presence of sealings at Late Neolithic Tell Sabi Abyad and other sites, but the occurrence at Tell Boueid II shows that very similar sealing practices apparently took place in very small villages as well (see Suleiman and Nieuwenhuyse n.d.: Chapter 3 and Chapter 7).

It is evident that in the context of this paper we cannot go into any detail when it comes to the ceramics. It may be useful, however, to give a short summary of the major ceramic groups that occur at Tell Boueid II (for a detailed presentation see Nieuwenhuyse et al. in press). The pottery provides a relative date for the excavated remains. On the basis of comparisons with the ceramic sequence excavated at Tell Sabi Abyad as well as with sequences retrieved from other Late Neolithic sites, we may tentatively propose a relative date at the end of the Pre-Halaf period and the beginning of the Transition to the Halaf. In terms of the Balikh sequence, Tell Boueid corresponds to the end of the Pre-Halaf period (Tell Sabi Abyad levels 8–7) and the beginning of the Transitional stage (Tell Sabi Abyad level 6). In terms of the traditional northern Mesopotamian sequence, Tell Boueid might perhaps be placed at the end of the Proto-Hassuna and the beginning of the Hassuna stage.⁴

The majority of the ceramic assemblage consists of a plant-tempered, brown-coloured ware, which occurs in great quantities on Late Neolithic sites across the *Jezirah*. We have simply termed it *Standard Ware*. The vessels are frequently burnished. Decoration may consist of red-slipping, red painted designs and appliqué decoration. A wide range of vessel shapes occurs, but the most common vessel shape is the convex-sided bowl with simple rim (Fig. 6: 14–15).

A very small proportion of *Dark-Faced Burnished Ware* (between 1 and 3%) occurs at Tell Boueid II (Fig. 6: 16). This strongly mineral-tempered pottery seems to be identical to the Dark-Faced Burnished Ware excavated at Tell Sabi Abyad (LeMière and Nieuwenhuyse 1996: 126–7, 146). As LeMière has argued (LeMière 2000; LeMière and Nieuwenhuyse 1996: 127; LeMière and Picon 1999), this pottery may have been brought in from western Syria. A characteristic vessel shape is the jar with tall, vertical neck. Vessels are frequently red-slipped. Typical decoration consists of semi-circular bands of red paint (7.5 R 4/6, red) in combination with thin incised lines. Interestingly, the Dark-Faced Burnished Ware jars

were often re-shaped into hole-mouth pots, by removing the neck and then grinding the rim (as was done with the illustrated example, Fig. 6: 16). The mineral-tempered fabric of these pots makes them excellent “cooking ware” (LeMière and Picon 1999). While they were perhaps not intended only as such by their original makers in the Mediterranean parts of Syria, the inhabitants of Tell Boueid II may have valued these vessels foremost as “cooking pots”.

A very small proportion of the pottery (between 1 and 5% of the ceramic assemblage) consists of a fine mineral-tempered, lightly coloured Fine Ware. The ceramic technology, the range of vessel shapes and the style of decoration make it clear that we may call this pottery *Samarra Fine Ware* (Nieuwenhuyse et al. in press, Van As et al. 1998). The Samarra Fine Ware mainly consists of relatively small and thin-walled vessels. Vessel shapes include carinated bowls and S-shaped vessels (Fig. 6: 11). The complex style of decoration shows the common Samarra repertoire.

A very distinct category, finally, is termed *Orange Fine Ware*. First defined at Tell Sabi Abyad (LeMière and Nieuwenhuyse 1996: 168–9), this pottery has now been attested at a number of Late Neolithic sites. It occurs at a number of survey sites in the Khabur headwaters (LeMière 2000: 129, Nieuwenhuyse 2000: 162–3, illustration 2). Orange Fine Ware forms part of the “classic” Samarra ceramic assemblage at Tell Baghouz (Nieuwenhuyse 1999; Nieuwenhuyse et al. n.d.). LeMière has attested this pottery at a number of Proto-Hassuna sites, including Tell Bouqras (LeMière 2000: 133). At Tell Boueid II, Orange Fine Ware comprises between 25 and 33% of the ceramic assemblage. Orange Fine Ware is characterized by a rather coarse and mainly mineral-tempered fabric, in combination with a pinkish-orange surface colour. The surfaces are frequently burnished. The vessels are in most cases decorated, either slipped or painted. The colour of the slip or paint varies from pinkish-red to reddish-brown (mainly 2.5 YR 5/6, red). Vessel shapes include carinated bowls and jars with tall, vertical necks (Figs. 6: 12–13 and 9–10, respectively). In terms of ceramic technology, vessel shape and the style of decoration, the Orange Ware shows resemblances to what Lloyd and Safar (1945: 278–9) once termed “Archaic Hassuna” pottery.

Some concluding remarks

The later Neolithic in Syria and northern Mesopotamia remains poorly understood. In contrast to the abundant amount of research devoted to the often spectacular remains from the incipient stages of the Neolithic “revolution”, comparatively little work has concentrated upon its consequences (Akkermans and Schwartz n.d.). In particular, we still know very little of the later stages of the Late Neolithic. At this time, communities across the Syrian and northern Mesopotamian steppes started to revolutionize their pottery production, by introducing new technologies and new styles of decoration. Between ca. 6100–5300 B.C., the Hassuna and Samarra ceramic traditions swept across the *Jezirah*, connecting local communities that were living widely apart. The cultural tradition which today we call the Halaf was the logical outcome of these developments. From the geographical point of view, the Khabur area may have occupied a central, strategic position within these currents.

When talking about the Hassuna/Samarra period in northern Mesopotamia, it is tradition to look at central Mesopotamia for social and cultural “impulses”. There is a strong tradition in current archaeological thinking that sees Late Neolithic communities in the north as peripheral to, or somehow “dependent” on, the central Mesopotamian example. We feel that this view does injustice to the increasing evidence for strong cultural continuities in the north, leading without apparent interruption from the Pre-Halaf into the Halaf period and

hence onward. Just as with the Balikh valley and the northern Iraqi *Jezirah*, it can be argued that the introduction of the Halaf in the Khabur area resulted from a gradual and uninterrupted process. In terms of the pottery, this process appears to be characterized by constant innovations in ceramic technology and style.

As a matter of fact, notwithstanding certain stylistic differences, the local Hassuna and northern Samarra pottery traditions found in these regions fall within the same broad traditions as those attested in the traditional Mesopotamian “core” areas. The later (Standard) Hassuna, “classic” Samarra and “northern” Samarra Fine Ware pottery traditions share a similar ceramic technology (Nieuwenhuyse et al. n.d.). In terms of the pottery, at least, the cultural boundaries between north and south are less absolute than is sometimes thought.

The socio-economic context of this development shows a gradually increasing complexity of sedentary settlement, which eventually provided a solid foundation for the denser patterns of settlement that characterize the later stages of the Halaf period. A number of scholars argue that a more specialized (semi-) pastoralism was developed at this time (Cavallo 2000). Villages became the sedentary focal point for a partly transhumant community (Akkermans and Duistermaat 1997; Verhoeven 1999). The increase in villages may well be associated with increasing subsistence mobility. The analysis of the faunal remains suggests that the inhabitants of the small village at Tell Boueid II adapted successfully to the steppe environment by exploiting domestic herds and wild resources (Saña n.d.). This does not imply that they were full-time nomads; part of the community may have lived in the village year-round, while other members were present only during parts of the year.

Notwithstanding a stronger emphasis on mobility, however, northern Late Neolithic communities were able to successfully maintain settlements of considerable size. Sites such as Tell Nisibin (site KS 70) in the Khabur headwaters, Tell Mounbatah in the Balikh valley (BS 148, Akkermans 1993), or Domuz Tepe on the Kharamanmara plain (Campbell et al. 1999) are examples of large (over 15 ha.) and long-lived Late Neolithic sites. In close association with these changes, local northern communities across the *Jezirah* found new systems for administrative control, as evidenced in the wide spread of sealing technology and of iconographic styles that were similar over large distances. Seen from the perspective of the Khabur headwaters, the inhabitants of Tell Boueid II lived on the (southern) margins of the sedentary world, but were by no means culturally isolated.

Notes

1. In this paper I refer to Peter Akkermans’s (1993) discussion of Late Neolithic settlement in the Balikh valley. However, the final publication of prehistoric settlement in the Balikh is now underway, including extended discussions of the various collected materials and a re-evaluation of the Neolithic as well as an assesment of the Chalcolithic settlement (Akkermans, et al. n.d.).
2. Tell Aqab was included in the present survey as site KS 133 (Lyonnet 2000: 29, Table 2).
3. A number of specialists have participated in the Boueid project, and we are indebted to them for the information presented in this paper: Dr. A. van As and L. Jacobs (the ceramic research), Dr. Maria Saña (the fauna material), Dr. Yoshihiro Nishiaki (the obsidian industry) and drs. Kim Duistermaat (the sealings).
4. A number of different but related regional chronological terminologies are in use. In the Balikh valley, the Pre-Halaf period is termed the *Balikh IIC*, the Transitional stage is termed *Balikh IIIA*, and the earliest Halaf is termed *Balikh IIIB* (Akkermans 1993). In the northern Iraqi *Jezirah*, this corresponds to the *Hassuna II*, *Hassuna III* and *Halaf Ia* periods, respectively (Campbell 1992). In the Khabur basin, the Pre-Halaf period is termed *Proto-Hassuna* (LeMière 2000), the Hassuna/Samarra period is termed *Transitional*, and, following Campbell (1992), the earliest Halaf is termed *Halaf Ia* (Nieuwenhuyse 2000).

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Climatic Variability and the Logic of Ancient Settlement Patterns

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Abstract

Yale University Khabur Basin survey teams have discovered episodic settlement of the and Western Jazirah of northern Syria. This contrasts with the Eastern/Northern Jazirah where settlement was continuous and relatively denser. This paper addresses two issues. First, what accounts for the differences between the Eastern and Western Jazirah? Second, what climatic conditions would have allowed intermittent settlement of the West?

Introduction

The Jazirah, the steppe that lies between the Tigris and Euphrates rivers, is within the arc of the Fertile Crescent, and today is a major grain-producing region, but in the past there have been prolonged periods when the western part of the Jazirah lacked permanent settlements.

During the first half of the third millennium B.C. there was a major expansion of settlements in the Western Jazirah into regions that previously were unsettled (Fig. 1). This unexpected result developed during survey of the semi-arid steppe of northeastern Syria, by members of the Yale University, Khabur Basin Project (Hole 1996; Hole 1997; Hole n.d.). An initial small scale third millennium settlement was followed by a concentration of populations into large towns and cities, and then a collapse when most of these settlements were abandoned. There are cogent socio-economic-political factors to account for some of these changes, and climate has been invoked as the cause of the collapse (Weiss 1997; Weiss et al. 1993). The questions here are what factors resulted in a) the new settlement of a vast stretch of the Jazirah early in the third millennium, b) the development of a unique type of settlement system by mid-millennium, and c) its subsequent collapse. My focus here is on the western half of the Jazirah where water deficiencies have traditionally limited settlement, and how this region differs from its eastern counterpart.

Mallowan remarked on the differences between the Western and Eastern Jazirah “This region (the west) differs in climate from the Habur-Jaghjagh region in that it enjoys a lesser rainfall and is drier steppe more nearly resembling that of S. Babylonia—essentially a pastoral rather than an agricultural land. Today this is only used as a grazing ground for the Beduin, and the comparative scarcity of mounds as compared with the Habur-Jaghjagh region which is thickly infested with Tafsils, indicates that there were the same physical differences between the two regions in antiquity” (Mallowan 1934–35: 34). Van Liere refers to this as a “low rainfall area West of the Khabour, where a very regular form of large tells

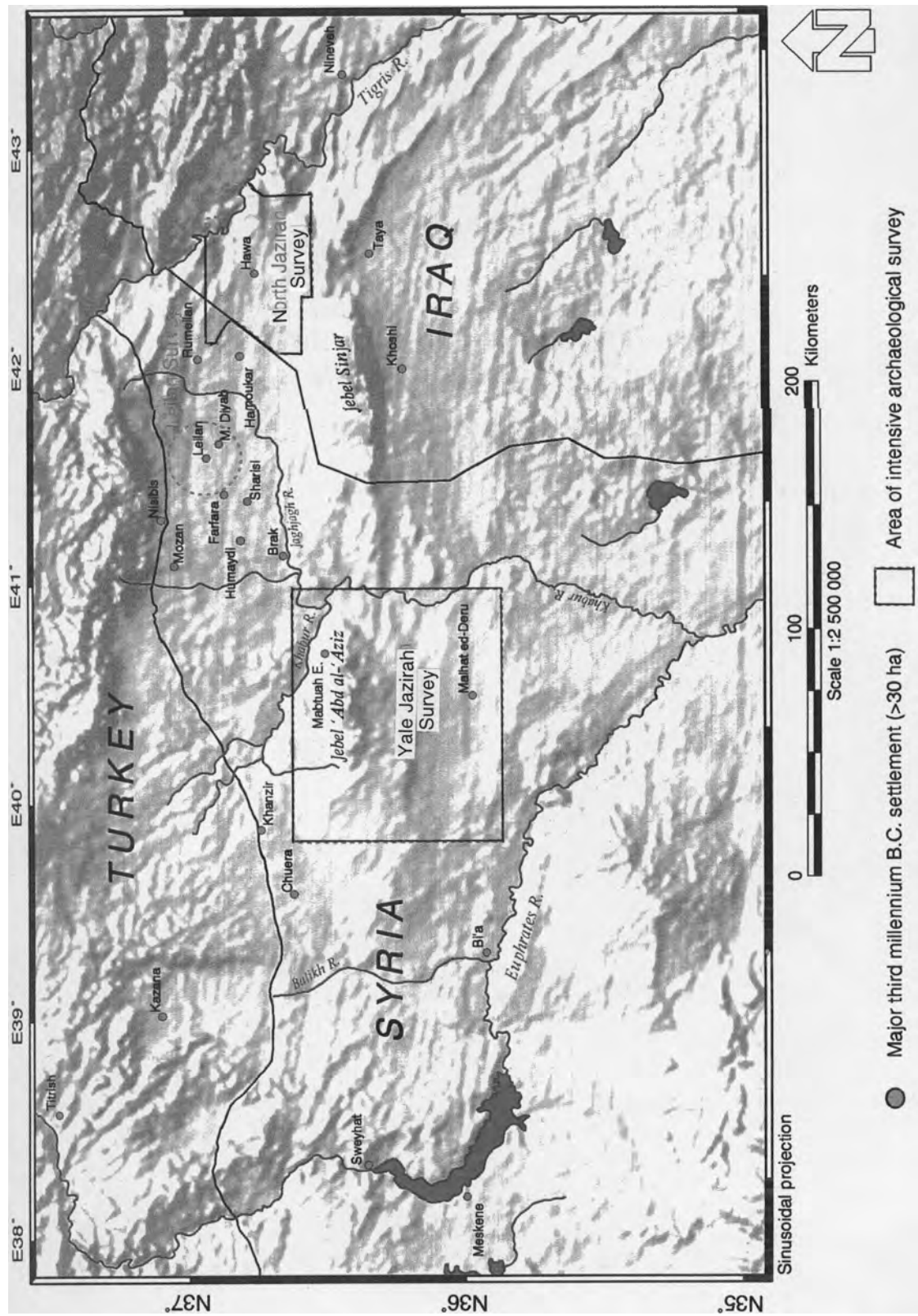


FIGURE 1. Topography, major third millennium B.C. settlements, and archaeological survey areas of the West and North Jazirah. (Map from Kouchoukos 1998: Fig. 7.1).

dominates . . . The form of the tells with the outer wall at a distance and their position in a low rainfall zone may be indicative that these people were at least partly pastoral. It seems that this area with all its towns was abandoned at the end of the Old Bronze" (Van Liere 1963: 14–15).

Archaeological Evidence

Although there has not been a full-scale intensive survey of the entire Jazirah, it is apparent from surveys by Oppenheim (Oppenheim 1901), Mallowan (Mallowan 1934–35), Van Liere and Lauffrey (Van Liere and Lauffray 1954–55), continued recently by Lyonnet (Lyonnet 1998; Lyonnet 2000) and Wilkinson (Wilkinson and Tucker 1995), that the major multi-period sites that grew into large centers in the third millennium all lie in the eastern half. A line from Tell Mozan on the Turkish border, through Chagar Bazar to Tell Brak, defines the western limit of such settlements. (Fig. 1). West of this line there are only scattered, small prehistoric sites and the large *Kranzhügeln* which were founded on virgin soil or on only small previous occupations. This distribution can be compared to the North (East) Jazirah, just across the Tigris River, as reported by Wilkinson where, in the third millennium, large sites were again situated in the northern and eastern part of the survey zone and the south and west region was effectively deserted. This left a relatively unsettled zone between the North Jazirah and the eastern Khabur. Wilkinson sees this empty quarter as reflecting social and economic factors, as this hilly land is less productive than that surrounding the large tells (Wilkinson and Tucker 1995: 86). His study brings to the fore the importance of micro variation in the landscape: soils, topography, population and yields of crops under different agricultural regimes on human settlements.

We may invoke a similar argument for the absence of important settlement in the north-western Khabur in that much of the land is elevated basalt plateaus with thin soils and limited agricultural potential but with commensurate possibilities as pasture. If, however, we look south of the Khabur River to the land surrounding the *Jebel abd al-Aziz*, we find a near absence of antecedent settlement, but the growth of a number of *Kranzhiigel*-type sites, as well as smaller third millennium settlements (Fig. 2). Unlike the situation in the eastern half of the Khabur or the North Jazirah, occupation was short-lived and not resumed in the second millennium. Indeed, it was only in Neo-Assyrian times that most of these sites were reoccupied. West from the Khabur until the *Balikh* drainage, there are a number of very large *Kranzhügeln*, headed by Tell Chuera at 65 ha, seemingly continuing the pattern that we found near the *Jebel abd al-Aziz*, although this region has not yet been fully surveyed.

In sum, across the Jazirah, we see a gradation from a dense pattern of long-lived sites in the North Jazirah and Eastern Khabur, to an abrupt cessation of permanent settlement in the west and south except for brief periods when both large and small sites are encountered. Interestingly, certain diagnostic ceramics follow a similar distribution. Ninevite 5 Ware as well as second millennium Khabur Ware are largely confined to the permanently settled region and are missing in the west. In the first half of the third millennium, the Ninevite 5 wares, a typical eastern style, are replaced by metallic wares from the west. Such types notwithstanding, there are overriding similarities in the ceramics across the entire Jazirah during the third millennium. Rather than there being distinct "cultural provinces," it is likely that the entire region was part of an agro-pastoral system, irrespective of local polities. This point is made in detail in Nicholas Kouchoukos's doctoral dissertation (Kouchoukos 1998), but our question here is not how one might understand the socio-economics of

settlement in the third millennium, but with how such a gradation in types and duration of sites reflects environmental variables.

Sustainable Agriculture

Sustainable agriculture is the basis for permanent settlement in all pre-industrial contexts of the Near East. In this region, subsistence agriculture depends on the amount of precipitation and its timing or distribution through the growing season. It is important to have rains early in the fall so that the seed will germinate and begin growth before the period of dormancy during the coldest part of the winter. With this start, the cereals will be ready to set seed in the spring if there is adequate precipitation or ground moisture before the onset of withering summer heat. Too late a start in the fall or insufficient precipitation in the spring can cause crop failure even when the total amount of precipitation is high. Thus it may be possible for crops to ripen when total rain falls below 200 mm, or to fail when it exceeds 350 mm. For this reason, precipitation isohyets on maps give only an approximation to the limits of predictable rain-fed agriculture.

Temperature is also critical to the growth of the cereal crops. The threshold temperature for the winter crops is 10C (Department 1977), with optimum growth in the range of 17–23C. Photosynthesis effectively ceases at 30C and above (Sage and Cowling 1999: Fig. 4). The length of the growing season is thus narrowly circumscribed and any combination of late precipitation, prolonged cold season, weak springtime rain, and early onset of high temperatures will restrict the growth of the cereals and legumes. It follows, therefore, that the predictability of agricultural success is closely related to the absolute length of the growing season, a function of both precipitation and temperature. We may also invoke agricultural practices, as Wilkinson has suggested (Wilkinson and Tucker 1995: 85). Unless fallow is observed, soil moisture to support germination may become depleted, a situation that might arise with the concentration of large populations and the need to intensify agricultural production, irrespective of temperature or rainfall.

Modern climatic patterns

The principal reason for the inability of the Western Jazirah to support settlement continuity is climate. The Jazirah is part of the Fertile Crescent, an arc of well-watered soils that frame the and near East, lying close to the foothills and base of the mountains from the Levant through southern Anatolia, across northern Iraq, to western Iran. Temperature and precipitation in this region are somewhat independent, but they both play critical roles in ground moisture that is available to plants. Precipitation is higher in the mountainous regions while temperature is generally higher in the lowlands. Because precipitation is driven largely by the westerlies off the Mediterranean, the greatest amount of rain falls on the coastal areas and declines inland. Similarly, precipitation is higher in the mountains. In combination, these factors—temperature, precipitation and topography—give rise to a layered climatic zonation. The Jazirah, lying horizontally within the climatic arc, cuts through these zones (Fig. 3). In short, and contrary to the general principal that rain declines toward the east, the Jazirah is wettest in the east and driest in the west. The result is that under modern conditions, rain-fed subsistence agriculture is not practical in the west, yet it has been practical repeatedly in the past. Let us look more specifically at what climatic factors are involved in these differences.

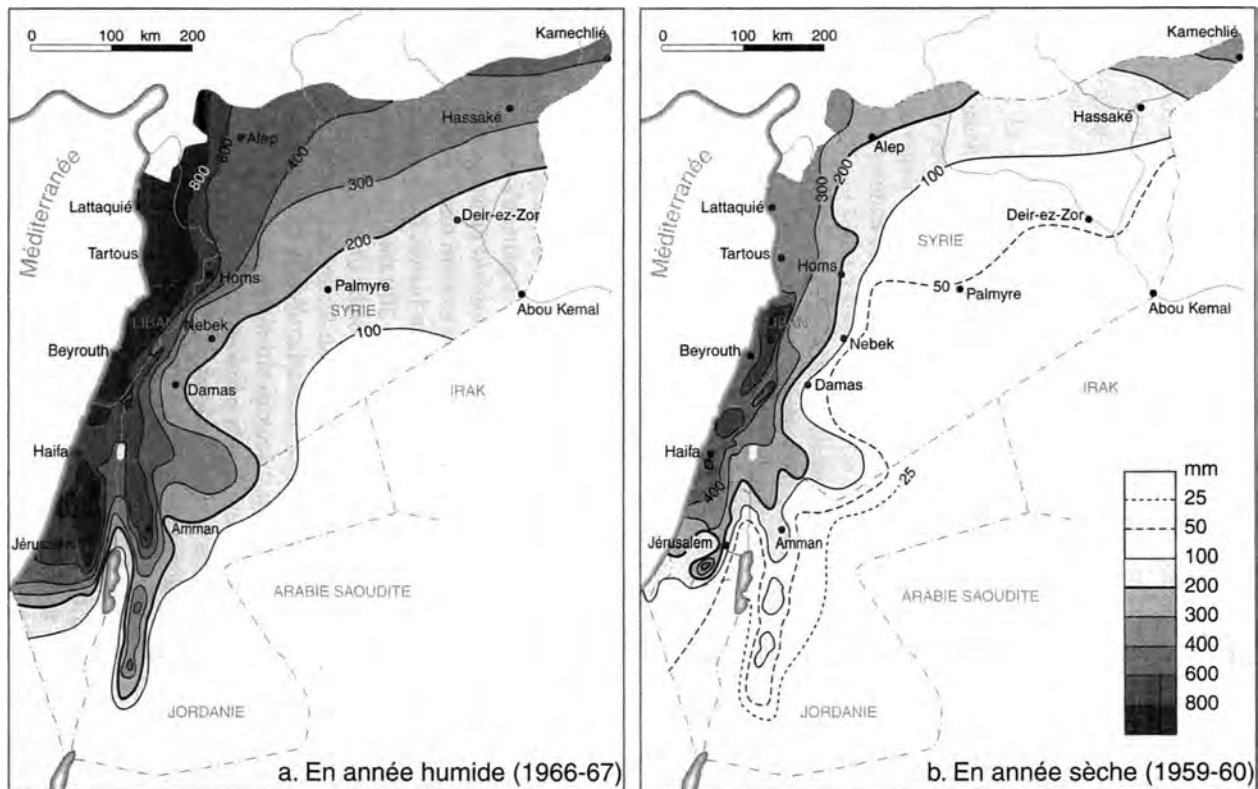


FIGURE 3. Annual variation in precipitation for Syria, showing layered zonation. a) Precipitation during 1966–67, a wet year, and b) precipitation during 1959–60, a dry year. (Maps from Sanlaville 2000: Fig. 47).

The autumn onset of $<10^{\circ}\text{C}$ across the Syrian Jazirah is the first decade (ten day period) of December, and the onset of $>10^{\circ}\text{C}$ is the first decade of March. Given this pattern, precipitation in October–November is critical to the germination of seed and initial growth before the period of dormancy. According to the Climatic Atlas of Syria there is an average of only 10 mm precipitation in October, but in November 25–50 mm falls on the upper part of the Jazirah. It is clear, therefore, that unless there is adequate moisture stored in the ground from the previous year, the crops have barely enough time to germinate before the onset of dormancy. The rains of December–January–February that are stored in the ground are available to the crops when the temperature rises above the threshold, but by March precipitation has dropped to 25–50 mm for all of the Western Jazirah. By contrast, the northeastern sector still enjoys >50 mm of precipitation through the month of April, after which temperatures have risen and growth has essentially ceased. In the Climatic Atlas of Syria, plots of the average water balance (the difference between precipitation and potential evaporation) show that virtually all of the Western Jazirah has a deficit on average of 200–400 mm, whereas the eastern part has half this deficit (Fig. 4). This relative deficit of springtime precipitation in the Western Jazirah is the apparent reason for the absence of subsistence agriculture there. In the North Jazirah where the annual average is >350 mm, crops may be expected to fail only once in ten years, whereas in the sectors with 200–300 mm of precipitation, they may fail two out of five years (Wilkinson and Tucker 1995: 7). Apart from the absolute amount of precipitation, another key to the differences is interannual variability which is more pronounced in the drier areas than in the wetter (Fig. 3) (Wilkinson and Tucker 1995:

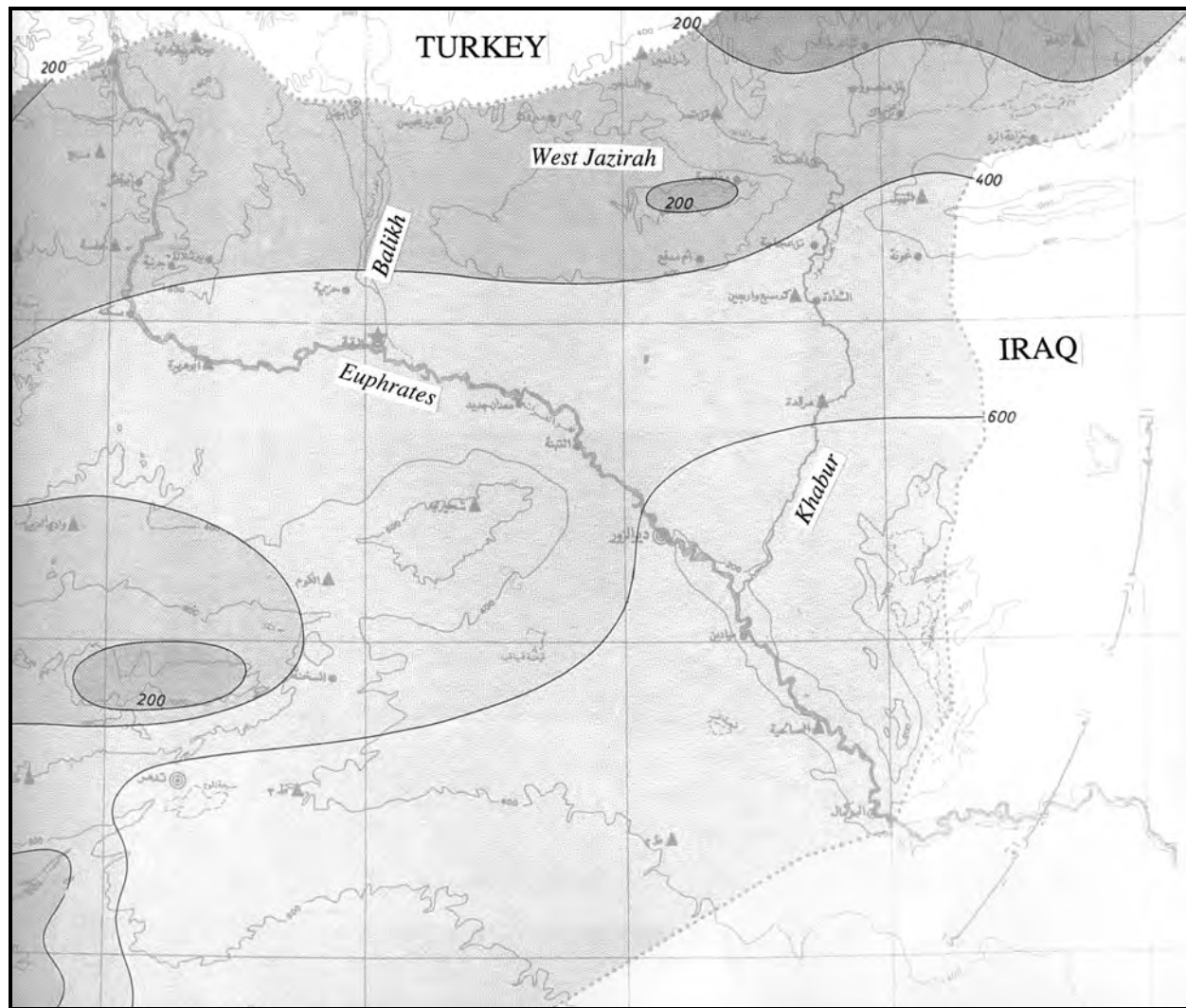


FIGURE 4. Average water balance during the vegetation period of winter crops for northeastern Syria. (Map from Climatic Atlas of Syria).

Fig. 4) (Wirth 1971). Ranges of 200–450 mm have been recorded in the North Jazirah where interannual variability is 25–35% (Wilkinson and Tucker 1995: 7).

While the westerlies off the Mediterranean bring the most precipitation into the region during the winter, after January rainfall drops abruptly and has ceased for practical purposes by the beginning of May. The exception to this general pattern is seen in northern Iraq and northeastern Syria where “considerable additional rainfall is brought in the spring by stationary low pressure cells that advect moisture from the Persian Gulf region. This moisture is precipitated orographically by the southern Taurus mountains causing rainfall across northern Iraq and northeastern Syria” (i.e., the Eastern Jazirah) (Kouchoukos 1998: 321). This springtime supplement during grain filling is critical to agricultural success in this region and accounts for much of the differential productivity of the Eastern versus the Western Jazirah.

Although our attention is focused chiefly on the potential for agriculture, we should not forget that there must also be sufficient fresh water to sustain populations of both humans

and livestock. Today there are no perennial streams other than the Khabur and Balikh Rivers in the Western Jazirah and most of the water that can be accessed by shallow wells is brackish and often not potable. Given the enormous water deficit during the summer across the entire Jazirah, it is probable that only with substantially increased precipitation in the mountains could perennial sources of water be accessed at the surface. We have yet to understand how water needs were met in the large sites that were located far from obvious sources of water, although we cannot rule out the use of wells.

There are some obvious deficiencies in our modern data when they are applied to local situations. Records of temperature and precipitation seldom exceed 25 years in length, there are often wide geographic gaps between recording stations, and records are often interrupted or unavailable. Typical maps with precipitation isohyets display average years, based on the length of instrumental records, but they do not incorporate a sense of how variable the weather is from year to year. Moreover, maps based on yearly averages mask the temporal spacing and intensity of precipitation, both of which are as important as the overall average. To some extent these problems can be overcome even in the absence of instrumental records, through the use of satellite imagery. The Landsat series provides some 25 years of images and total geographic coverage. Using this, we can directly observe the way vegetation responds to climatic variability and compare years with different climatic profiles.

The standard technique is to use the Normalized Difference Vegetation Index (NDVI) (Kouchoukos et al. 1998:). NDVI measures the vitality and coverage of green vegetation as the seasons progress, showing the differential timing of ripening in the spring and the extent and quality of ground cover. As we might expect, given the layered climatic zones of the Fertile Crescent, the trend of ripening follows this rather than latitude. NDVI averaged over a series of years clearly shows the Fertile Crescent, the belt of rain-fed agriculture and gives essentially the same view as one can compute from instrumental records or agricultural experience.

More importantly, we can use NDVI to compute interannual variability. In one example to examine variability when crops are ripening in the spring, NDVI maxima for March and April were summed for each year from 1982 to 1994, and the mean of these thirteen values was taken as an estimate of the NDVI of that pixel during the peak of the growing season." From these values it was then possible to calculate the standard deviation of the thirteen March-April NDVI values for each image pixel. This provides an estimate of the variability of the NDVI of each pixel about its mean value. A transect from northwest Syria southeast to the central desert that illustrates the long recognized fact that farming becomes riskier as one moves from west to east and from north to south" (Kouchoukos and Foster 1997: 6). Fig. 5 is a plot of NDVI and its standard deviation (which shows variability over a 13-year span) along this transect.

Interannual variability could be shown more graphically through a comparison of satellite images taken in years that were unusually dry or unusually wet, such as May 1987 and April 1986. The former was a dry year in which there is little evidence of agriculture in the sampled region, or natural vegetation on the steppe. The previous year, however, was wet and shows extensive agriculture and plant growth. A parallel expression is seen in Figure 3.

Conclusions

The differences in the settlement histories of the Eastern and Western Jazirah can be explained in purely environmental terms, as expressed in today's climate. It is clear that the

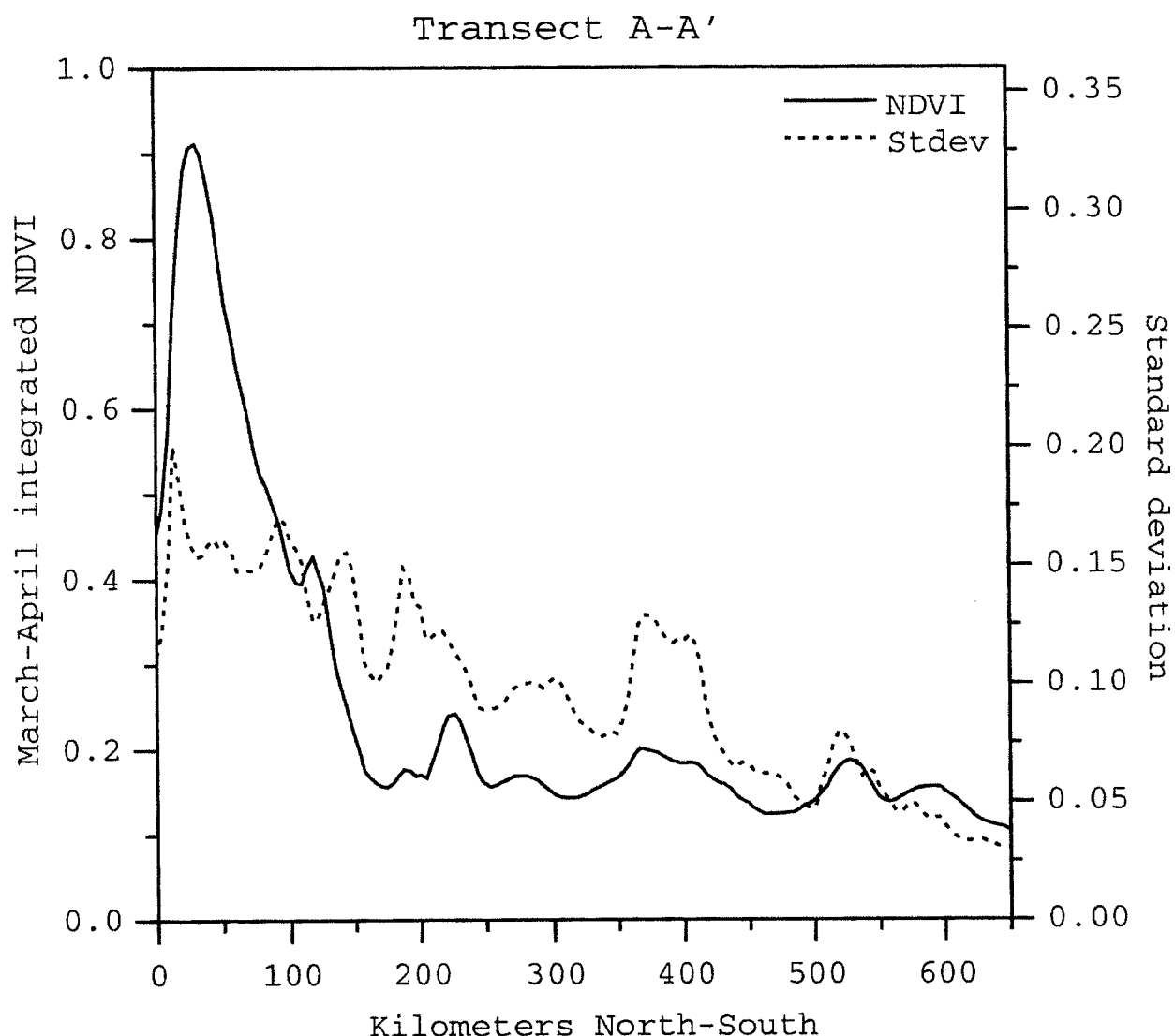


FIGURE 5. March-April integrated NDVI means and standard deviations, 1982–1994, for a transect running southeast from northwestern Syria into the central desert (Kouchoukos and Foster 1997: Fig. 6).

eastern half of the Jazirah enjoys relatively better conditions for agriculture than the west. It remains to be determined what precise mix of changing parameters can account for the success of agriculture in the Western Jazirah for half a millennium or more during the Early Bronze Age and during similarly brief episodes later. If, as seems likely, the sites were situated near permanent, flowing surface water (absent today), it implies greater amounts of precipitation, less seasonal rainfall, more propitious timing, less evaporation, or some combination of these. For agriculture, the changes in precipitation need not have been dramatic, as I have explained, because timing is perhaps the most critical variable. Nevertheless, unless there had been centuries of precipitation similar to that of the wettest years recorded in recent history, such as 1966–67, it is improbable that the settlements in the Western Jazirah could have been maintained. Some of the seemingly most and regions may have supported agriculture in small sedimentary basins that trapped water; however, water to supply both

humans and livestock must also have been readily available. This implies that surface sources existed throughout the year, unless the sites were occupied only seasonally.

What climatic conditions would have provided this much moisture? Today there are some small freshwater springs along the bases of the Jebel abd al-Aziz, but these support only small hamlets and modest irrigation. For practical purposes, except during the rainy season, none of the wadis flows off the mountain itself, yet this must have been the source for the sites within the Yale teams' surveys because this area is isolated by the Khabur River from the flow off the Taurus Mountains that supplies the numerous wadis of the upper Khabur drainage. Sites farther northwest, such as Chuera, however, may have benefited from flow that originated in the mountains of Turkey. We have no direct way to measure the precipitation that would have been necessary to support large settled populations, but we may surmise that it would have been at least as much as currently falls in the northeast of Syria, that is, >400 mm. This would have nourished dense and varied vegetation on the Jebel abd al-Aziz, including a pistachio forest whose relict exists today. Although transpiration from this vegetation would have depleted ground water, it would also have trapped runoff and allowed it to penetrate into the bedrock where it would then migrate to springs and sustain perennial flow. We thus imagine a vastly different landscape from that of today: a relatively lush steppe that supported large herds of sheep and permitted agriculture in locally favorable situations.

Critical to resolving the question of the actual conditions that permitted settlement will be the recovery of direct evidence from geomorphology, hydrology, palynology, sedimentology, and isotopic studies that can provide "ground truth." Secondly, climate modelers must scale down to the regional level and incorporate topography and ground cover into their circulation models. With a multi-dimensional, multi-disciplinary approach we should be able to reach a clearer understanding of the role played by climatic and other environmental changes in the fortunes of ancient cultures and civilizations. If so we can then accurately assess the degree to which people were able to respond to non-cultural, exogenous factors, such as shifts in weather patterns. Despite suggestive textual evidence for the extensive use of the Western Jazirah for the grazing of sheep, it remains a virtual certainty that the Kranzhügeln existed when and where they did only when local conditions permitted agriculture. Similarly, we may expect that the collapse of settlement around 2200 B.C. was, in large part due to a prolonged decrease of precipitation at least equal to the most extreme of today's interannual variability. Our aim now is to discover what climatic parameters changed and how this affected the Jazirah and other regions within the same climatic system.

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Notes

The oral presentation of a somewhat different version of this paper in Copenhagen included a

number of color slides based on satellite-derived images that could not be reproduced in this publication. When possible, the information contained in the slides has been converted either to text or to black and white maps in this version of the paper.

Computer-generated color images of temperature, precipitation, water balance, and interannual variability were presented in Copenhagen.

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Tribal and State: The Changement of Settlements and Settlement Pattern in Upper Mesopotamia during the 3rd and 2nd Millennium B.C.

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Abstract

Until the late twentieth century archaeologists have centered their activity mostly on Southern Mesopotamia and on the “Biblical Areas” of Palestine. Besides, the interest has almost exclusively been focused on the big cities, whereas ordinary towns, villages and hamlets have only occasionally been excavated. The situation has now changed, due to a big number of excavations and surveys. We are now able to reconstruct the history of complete regions as well as the economic conditions and social developments that may have involved the rise of urban cultures and their rural hinterland. The following outlook is limited to the area of Upper Mesopotamia, the region between the Euphrates and the Sinjar mountains. Geomorphologically it is a topographical unit, consisting of a tableland sloping down to the rivers. The area belongs to the natural rainfall zones around the 200-millimeter isohyet, where rain-fed arable farming is still possible. The timespan here treated comprehends the third millennium, the beginning of urbanisation with the special type of settlements, called “Kranzhügel,” a period of big changements in the settlement pattern and the socio-economic structure, mostly depending on external influences.

The basis of the paper are the results of the recent excavations and a first evaluation of a survey in the area of Tell Chuera. In principal the main topics are the distribution of settlements, centrality and urbanisation, socio-economic background, the impact of agriculture and the transformation of the inhabitants of that area, belonging either to tribal or to state communities.

Until the late twentieth century Near Eastern archaeologists centered their activities mostly on Southern Mesopotamia and on the “Biblical Areas” of Palestine. Besides, the interest had almost exclusively been focused on the excavation of big cities, whereas ordinary towns, villages and hamlets had just occasionally been explored. The situation has now changed completely, due to the large number of excavations and surveys. We are now able to reconstruct the history of complete regions as well as the economic conditions and social developments that may have involved the rise of urban cultures and their rural back-country.

The following outlook is limited to the Raqqa province in north eastern Syria which forms part of what is called “Upper Mesopotamia”. Geomorphologically, it is a topographical unit, consisting of a tableland, sloping down to the Euphrates. The area belongs to the natural rainfall zone around the 200-millimeter isohyet, where even today, rain-fed arable farming is still possible (Fig. 1).¹

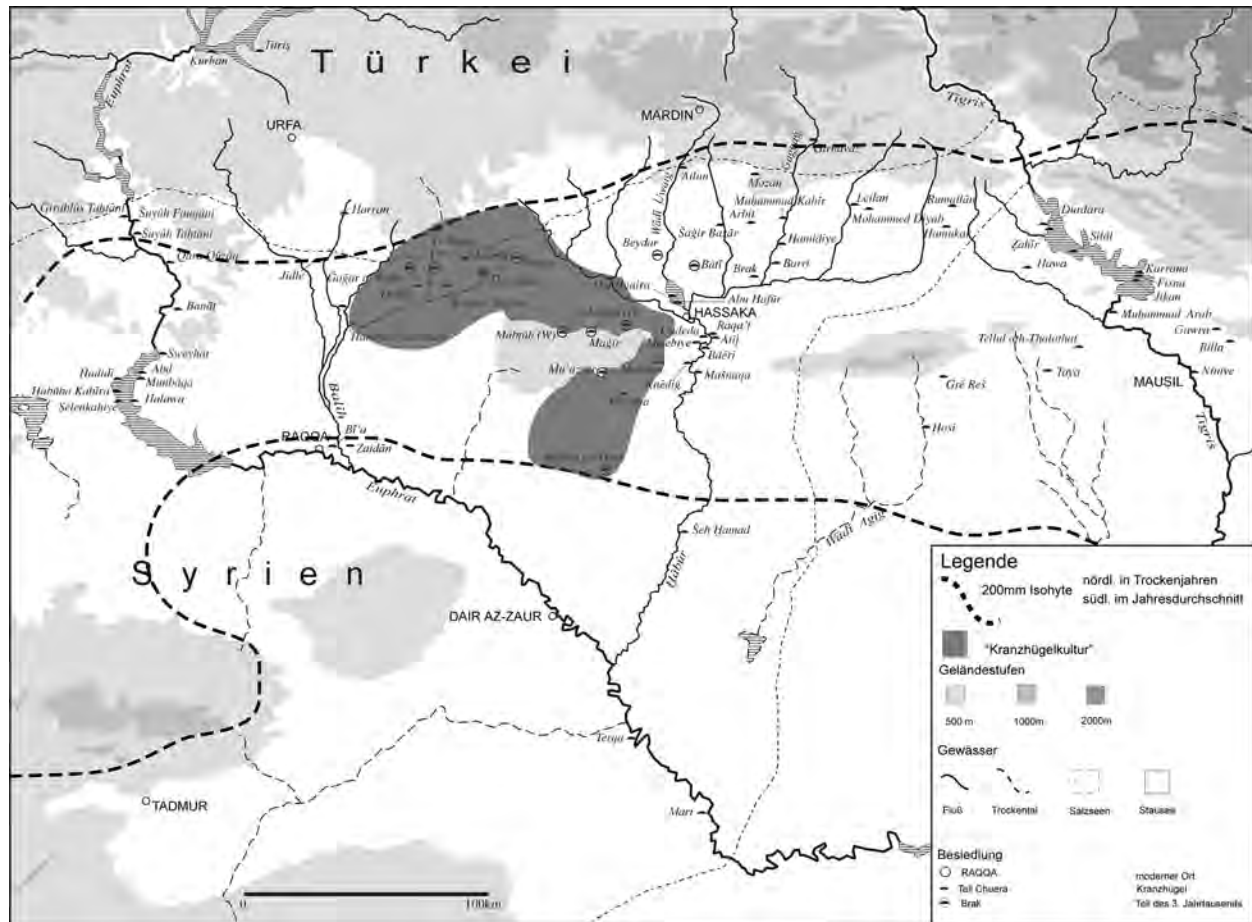


FIGURE 1. Map of Syria and the distribution of “Kranzhügel”-type settlements.

The archaeological exploration of this region started almost 100 years ago with the travels of Max Freiherr von Oppenheim. He came to Upper Mesopotamia in 1899 on a journey from Beirut to Baghdad, as he was interested in the ancient history as well as in the life of the Bedouins inhabiting this region of this time.²

In 1911 he started an excavation of the most important site of Tell Halaf, subsequently exploring rumours of sculptures found on that ruin hill in the neighbourhood of the modern town of Ras al Ain. However, as his interest was not only limited to the exploration of a single site, but to the history of Upper Mesopotamia in general, he used the time he spent in Tell Halaf to travel through the country and to explore almost every ancient site he found on his way. This was not a systematic survey according to modern conceptions, but nevertheless von Oppenheim gained much insight into the settlement history of the entire region. He was deeply impressed by the number of ruins he found in the region between the two tributaries of the Euphrates, the Khabur and the Balikh. Before the First World War this territory had only been used by nomads.³

1. In general and with further literature see Wilkinson 1997.

2. One of his books, Max Freiherr von Oppenheim, *Die Beduinen* (1939) is still useful to learn something about the life and customs of beduin people.

3. A description about beduin life in Northern Syria is to be found in Oppenheim 1931: 11–35.

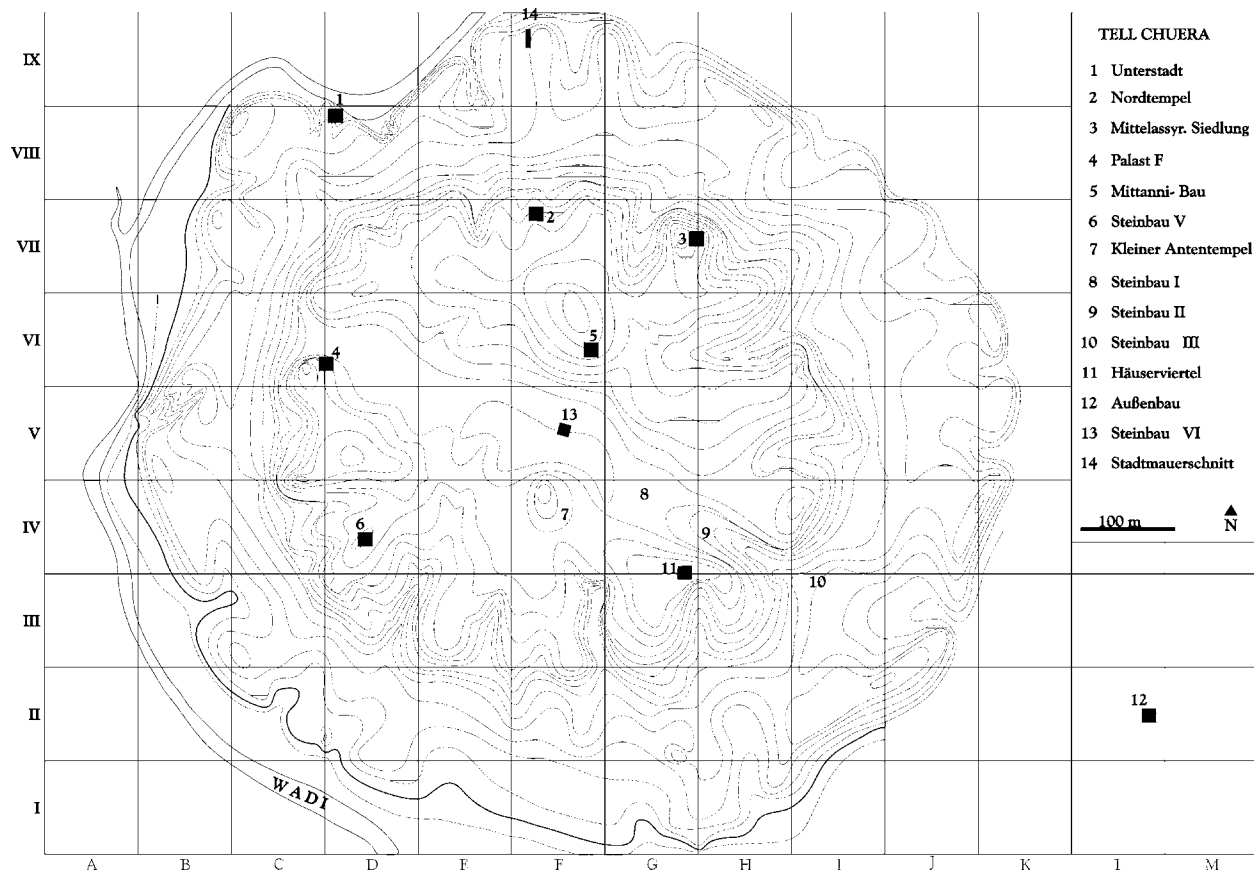


FIGURE 2. Plan of Tell Chuera with excavation areas.

Von Oppenheim was the first one to notice that quite a number of these ruins belonged to a specific type of settlement which he called “Kranzhügel”, because of their characteristic shape. At his time, the knowledge of the archaeological history of the region was still not very advanced, and he was therefore unable to give a more precise date to this type of settlement, but he had already noticed their cultural homogeneity.

Today we know, that the “Kranzhügel” type of settlements are to be divided typologically into two groups, one with a depression in the middle, like Tell Chuera, the other with a peak-like structure—for example Tell Beydar. Both settlement types belong and represent a local civilisation of the 3rd millennium B.C. which exists in the plain between the Balikh and the Khabur, as well as in the steppe country to the south of the Djebel Abd al-Aziz (Fig. 1). All these settlements came into existence during the first centuries of the 3rd millennium, i.e., around 2,700, and fell into decay at the end of the Akkadian empire, i.e., in the 22nd century B.C. The end can possibly be connected with the, also literarily delivered, campaigns of Sargon or, even more likely, Naramsin, the most famous rulers of this period.

Tell Chuera is one of the major sites of this civilisation, at least 1 km in diameter or 65 ha being the largest in dimension (Fig. 2). The plan clearly shows very well the characteristic features of the “Kranzhügel” type of settlements, the circular shape with an outer wall and the fortified upper town.

Excavations have been carried out since 1958. The main occupation is dated to the EB II–III, or ED II–III/Early Akkadian in the Mesopotamian periodisation, i.e., 2,700–2,200



FIGURE 3. Plan of palace F.

FIGURE 4. (top, facing page) Temple S (Steinbau VI) front view with stairway leading to the entrance room.

FIGURE 5. (bottom, facing page) Plan of the “via sacra”.

B.C. A short account of the results points to an urbanised settlement with an outer and inner fortification—typical for this kind of settlement—various official buildings such as a palace (Fig. 3) and several temples (Fig. 4) or religious buildings, at least partly constructed in a kind of “via sacra” with a propylon (Fig. 5), several connections leading to the main temple, possibly dedicated to the Syrian weather god.⁴ There are also domestic houses, obviously organised in quarters (Fig. 6).⁵

According to the excavation results in Tell Chuera there was a hiatus in the settlement sequence between the late chalcolithic period (approx. 3,300 B.C., compare to Hammam VB) and the beginning of the “Kranzhügel”-culture. Nearly the same origin seems to be present at all other “Kranzhügel” as far as one can derive from the first results of our survey and the excavation in Kharab Sayyar. Obviously this culture started suddenly and with an urban-

4. The reason for this identification is some horn corns of the wild bull close to the stairway leading up the temple platform (Vila 1995: 259-266).

5. Dohmann-Pfälzner and Pfälzner 1996: 1-13.

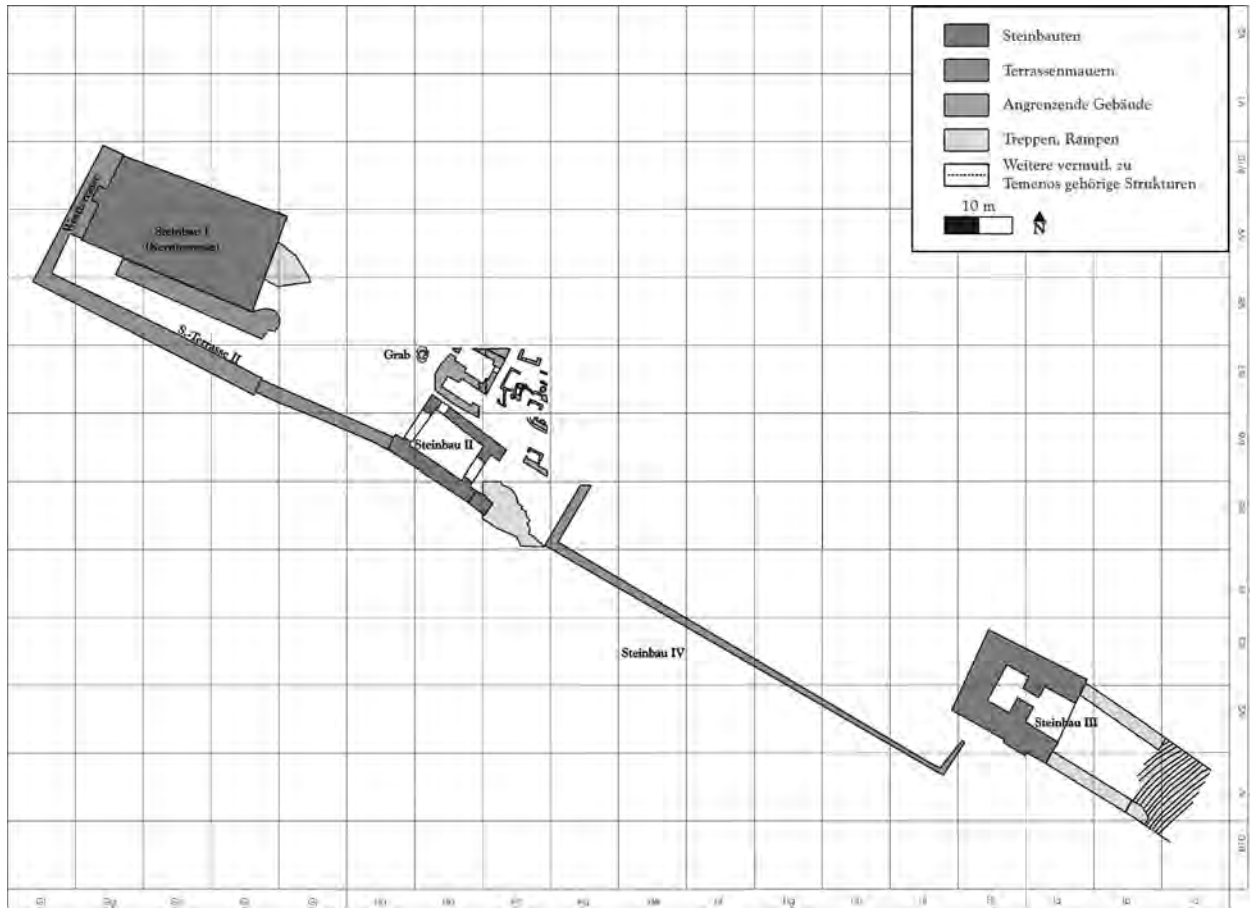




FIGURE 6. Private quarter in area K and enclosure wall of the quarter.

ised character from the beginning. Furthermore, our survey results point to the lack of an organised settlement system as in other regions already established at the same period (i.e., Diyala, Ebla).⁶ With a few exceptions, there were only “Kranzhügel”-type settlements, with no smaller towns or villages surrounding them in the area of Tell Chuera.

Trying to interpret this data, one main question occurs immediately: Who were the founders of this culture with no direct forerunner? The material culture points partly to Mesopotamia, more precisely to the Diyala-region, according to some pieces of art (statuettes, relief, sealings) which are dated to the ED II-period and consequently earlier than all other comparable material from Syria, including Mari. On the other hand, the pottery production as well as the architecture—especially the typical North Syrian Antentempel—depends on a more local tradition.⁷

For a better explanation let us look at the rise of Ebla, the most well known urban centre in North Syria during the second half of the 3rd millennium. The city belonged to what is called “Secondary Urbanisation,”⁸ the second wave of urbanisation after the first one during the Uruk period (ca. 3,300–2,900 B.C.), which did not touch neither Ebla nor Tell Chuera. The same trend towards urbanisation is recognisable at a number of sites in Syria during

6. Meyer 1996: 132–170. Compare for the Balikh area Wilkinson 1990: 49–62; 1998: 151–170.

7. As already pointed out by Margueron 1991: 1104–1258.

8. See the different articles in Weiss 1986, see also Mazzoni 1991: 154; Frangipane 1998: 195–218.



FIGURE 7. "Stelenstraße".

the middle of the 3rd millennium. Major changes in the scale and complexity of settlements demonstrate a transition to urbanised societies. This kind of secondary urbanisation of Syria is also to be found in Mari, Tell Mozan, Tell Brak, Tell Leilan, Tell Beydar and in Tell Taya, east of the Sinjar. These developments did not start at the same time and did not develop everywhere to the same degree.⁹

Ebla, its 56 ha being nearly the same size as Tell Chuera, and the other sites belonging to the so called calciform culture of northern Syria started a little later than the sites in the upper Khabur area, including Tell Chuera. The reason for this gap and the socio-economic conditions responsible for the urbanisation are not easily identifiable and are still in question.

In any case, the development in Northern Syria seems to have had a local basis, established on an analogous economic organisation based on dry farming and extensive animal breeding.¹⁰ However, opposite to the development in Southern Mesopotamia where irrigated cultivation lead to the possibility of relatively small dimensioned city-states, in North Syria the low yields of rain-dependent agriculture and the necessity of a vast area to pasture flocks demanded a political hegemony over a territory with autonomous minor urban centres, a system of settlement pattern more comparable with the Diyala region or the Fars in Iran. These minor centres, villages and hamlets were forced to support the main centre with agricultural products, grazing rights for its flocks and free circulation of goods. Ebla was,

9. Postgate 1994: 1–13; compare Dolce 1998: 69–70.

10. Archi 1982: 173–188.

therefore, obliged to create a peripheral, administrative network which included large parts of Northern Syria to the Euphrates and beyond.¹¹

A similar center to the east must have been Mari, with sub-centres like Brak and Beydar, and possibly Mozan and Leilan.¹² In all these centres, the introduction of writing started very early. The Ebla scribes adopted the script to write in their own language,¹³ the Beydar and Mari ones were more orientated to Mesopotamia, whereas in Tell Chuera until now no writing has been proved. Even if urban settlement in Tell Chuera started a little earlier than in Ebla,¹⁴ the political structure, interior and exterior, was different. Obviously, to judge from the known material, Tell Chuera and the other “Kranzhügel”-settlements did not belong to a superficies state.¹⁵

Was this a free decision of the population, possibly depending on the structure of their society, or was this forced by exterior powers? Let us have another look at Ebla, as we have the most information from this site. There, the cult of the dead kings seems to have been linked to the Eblaean concept of kingship (ARET 7, 150, TM 75.G.120) and also, after kingship at Ebla had been consolidated, a canonical sequence of kings, chosen from tribal chiefs who were buried and traditionally worshiped at various places in the kingdom (Darib, Binash) was established.¹⁶ As well as the king (EN, LUGAL),¹⁷ there were the institutions of the “elders” (ÁBBA.ÁBBA)¹⁸ and the “Lords” (LUGAL.LUGAL),¹⁹ both linked by family ties to the kings, to govern the state.

It is assumed that both, the elders and the Lords, derive from tribal institutions and these leading families then played a major role in the state responsibilities. Judging from the published texts, the economic and institutional role of these elite groups allowed only a low profile kingship at Ebla. Moreover the slow speed of social development in Syria helped to establish a system typical of a kinship based society (tribal). Even if its ideology and character cannot be traced back directly to the transition from nomadic or semi-nomadic life to an urban society, the basis of those groups, animal breeding, was still in the hands of the royal and elite families and remained an activity, mostly run by the state authorities.²⁰

These tribal links we can find in Tell Chuera and the “Kranzhügel”-culture as well. As I have stated elsewhere, the so called “Außenbau” in Tell Chuera (Fig. 7) might have served for the worship of local leaders, while at Djebelet al Beida in the Djebel Abd al-Aziz the worship of tribal leaders was practised.²¹ Comparable places for the local worship have been registered outside several “Kranzhügel”, for example Tell al Ghadjar, west from Tell Chuera, or Tell Beydar, but unfortunately those were never documented. Apparently, the

11. Compare, Archi 1991: 204–218.

12. About the political role of these centres and their hierarchical relations see Weiss 1986: 71–108; 1990: 387–407; Weiss and Courty 1993: 131–155.

13. About the political intention of the introduction of writing in Ebla, Archi 1993: 43–44.

14. Already Weiss 1986: 87.

15. But regard the suggestion of A. Archi (1998: 1–15), to identify Tell Chuera with the, from written sources well known, regional centre of Abarsal. An indirect equalisation of Tell Chuera with the kingdom of Ra’ak is to be found in, Meyer 1996: 162–163; compare Bonechi (1998: 223–236), who gives no concrete identification of those toponymic names.

16. Archi 1986: 213–217.

17. Archi 1987: 37–52.

18. Klengel 1989: 61–65.

19. The highest officials in the Ebla administration.

20. Compare, Steinkeller 1993: 107–129.

21. Meyer 1997: 294–309. Compare Lyonnet 1998: 179–193.

population of both sites, Ebla and Tell Chuera, developed from a tribal background and produced comparable structures, but in Tell Chuera there seems to have been no movement to a powerful political state-structure.

The reasons for these different developments are difficult to understand. A possible answer is the strategic position of Ebla, at the crossroad of major trade routes, which lead to the political power.²²

If it was not a tendency for political power, what could have been the motivation to settle, and not only to settle, but to construct urban centres? So far, there is no concrete answer, only a hypothesis can be stated.

In Mesopotamia, there was a period of low rainfall around 3,200 B.C. During this period, the canal network increased and in the context of the productivity of irrigation agriculture the “First Urbanisation Period” large urban centres appeared.²³ The same phenomenon can be observed in the dry-farming plains of Northern Mesopotamia and Syria with the raising of precipitation around 2,900 B.C. Then a more extensive agriculture was also possible in these regions (compare the development of urbanisation and state formation in the lowlands of Mesopotamia and Khuzistan).²⁴

The suggested tribal background—still visible in the records of Ebla and presumed by the interpretation of the material culture in Tell Chuera—is to be connected in one way or the other with nomadic groups, more precisely with pastoral nomadism, depending on the exploitation of domesticated herd animals. Such pastoralists are normally living in a, what Rowton called, dimorphic zone,²⁵ that is an area in which both the grazing of herds and agriculture are possible.²⁶ The cultivation of crops by nomadic pastoralists is well known and normally performed along their migratory routes and belongs, besides animal herding, to their economic strategies.

These organised tribal groups produced a considerable variability in their political organisation, from small, relatively decentralised and “egalitarian” groups to large, highly integrated, and centralised “hierarchical” chiefdoms. However, in well stratified chiefdoms, leadership seemed to be unstable, as one can still see in the Ebla documents. Such centralised political units were most characteristic of tribal groups living in close proximity to powerful sedentists, from whom they might have learned that kind of political complexity.²⁷ Those groups inhabiting the area between the Khabur and the Balikh were linked to the growing cities in the Khabur valley. A symbiosis came into existence within which the pastoralists provided animal products to the sedentarists and received agricultural goods and craft products in return.²⁸

22. Matthiae 1977: 193–198; Archi 1993: 43–58. Concerning the political power of Mari, a similar control of the main communication routes is attested, Margueron 1989: 119–126. For different trade models as the base of the formation of early state organisations, compare Lamberg-Karlovsky 1975: 341–365; Foster 1977: 31–43; 1993: 59–68.

23. Weiss 1990b: 159–166; 1990c: 193–218.

24. Wilkinson 1990: 49–62.

25. Rowton 1973a: 202–203; 1976: 17–18; 1973b: 247–258; 1974: 1–30. But see the discussion in Liverani 1997: 44–48.

26. One has to point to the different use of “dimorphic” between Rowton and Mauss, who established the concept for a dissimilar society, Mauss 1904–1905: 39–132.

27. Not according to the concept of Rowton, but compare Anbar 1991: 21–23; Cribb 1991: 26; Kamp and Yoffee 1980: 85–104.

28. Compare Matthews 1978: 84.

The rising of states might have forced the leaders of pastoral groups to confront and to negotiate with the sedentist authorities in order to secure the control and allocation of their people and resources. This political necessity, together with the better conditions for dry-farming, may have allowed those groups to settle. Against this background, some of the phenomena of the “Kranzhügel”-culture can be explained.

The lack of a hierarchical structured settlement system and the appearance of single urbanised centres without villages and hamlets surrounding them to provide for the citizens, may depend on sedentarisation of tribal groups. Single units, for example a clan, decided to settle and to build a city like Tell Chuera, Kharab Sayyar, Dekhliz or one of the others. This fits quite well with the explanation of those structures like the “Außenbau” in Tell Chuera as a place for ancestor worship of the leaders responsible for the settlement under consideration.

Another hint supporting this suggestion is to be seen in animal provision. During the oldest phase of Tell Chuera, IC, animals—mostly sheep and goats—were slaughtered quite young, before their first year. Obviously, most of the herd was used for meat and milk production and the slaughtering age points to the lack of fear about the reproduction of flocks as they still must have been quite large.²⁹ Later, during the period Tell Chuera ID, the herders were more cautious and slaughtered their animals later, after the first year, or more exactly, after the first parturition. This change can be seen as a development from the more nomadic meat production to typical urban products like milk, skin (leather), hair and other by-products.

According to these reflections, the origin of Tell Chuera and the other settlements of the “Kranzhügel”-culture might be explained by the sedentarisation of tribal nomadic groups. It is quite interesting to observe, that the settlements of this type are limited to an area with variable precipitation. Neither more to the south nor more to the north, the slopes of the taurus mountains, comparable structure are to be found. Obviously, the south was always to dry, the north (north of the modern turkish border line) had water enough for permanent settlements. However, it was not a shift from tribal to state, as there are no clear indications for a state formation in this region.³⁰ It seems to have been just a loose confederation of more or less independant tribal groups, settling in their former summer pasture zone.

At the beginning of the next dry period around 2,200 B.C., this culture came to an end³¹ and the area was again used as tribal pasture land. During the 2nd millennium, the region was at first still used as pasture land with just some small settlements. Only at the end of this millennium did the settlement pattern change again. A lot of small and medium sized settlements were formed, others, like Tell Chuera, were resettled. However, they were not independant anymore, but belonged to regional powers, the Mitanni- and the Middle Assyrian state. Again favoured by climatic changes, the political expansions of these empires supported the use of this region as one of the main agricultural areas.

29. Vila 1998: 135–137.

30. In contrast to the “dry-farming states” in Northern Mesopotamia according to the theoretical model of Wilkinson 1994: 483–520.

31. Weiss et al. 1993: 995–1004.

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Climate Change and the Aegean Bronze Age

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Abstract

In this paper we summarize archaeological and environmental data from the Cyclades, the Greek Mainland and Crete for the third millennium B.C. (Figure 1). We note two horizons of cultural disruptions throughout most of the Southern Aegean which seem to be contemporary with a brief climate shift towards aridification at the end of the Early Bronze Age. This shift is reversed in the early Middle Bronze Age and may be associated with the blossoming of Minoan palatial culture. We suggest that regional differences in settlement history ca. 2300–1900 B.C. may be due to micro-environmental variability within the Southern Aegean.

Archaeological background: Settlement patterns

In the 1960s and 70s, Caskey, the excavator at Lerna, wrote a series of influential articles outlining a two-fold sequence of events in the Aegean during the later third millennium. Caskey proposed that the horizon of destructions at the end of EH II (ca. 2400 B.C.) in central Greece had been caused by a wave of newcomers, which was followed by a second wave of immigration at the very end of EH III (ca. 2000 B.C.). Subsequent research, however, has identified two phases to EB III, making a total of three separate cultural periods during this time, each with its own distinctive characteristics (Table 1).

We present the EB II–III sequence as it is currently understood in three regions of the Aegean, the Cyclades, the Greek Mainland and Crete (Fig. 1).

Cyclades

Following centuries of peaceful prosperity during the EC IIA period (ca. 2600–2400 B.C.), new, fortified settlements, e.g., Kastri on Syros and Panormos on Naxos, were established on hilltops during the following EC IIB period (ca. 2400–2200 B.C.). Nevertheless, other earlier sites, such as Kea continue into this period. Cycladic pottery of the EC IIB period features a number of new Anatolian shapes. EC IIB metal artifacts, in their forms and in the use of tin as an alloy, also reveal Anatolian influence. On the other hand, EC IIB burial customs show no change. Davis (1992: 754) sees the EC IIB phase as one of increased Aegean-Anatolian commercial connections, while Rutter (1993: 764) has hypothesized the immigration of peoples into the Aegean. This EC IIB period is contemporary with Troy IIg whose great wealth and wide international connections span the Aegean, inland Anatolia and the Near East. The period comes to an end ca. 2200 B.C. with destruction of Troy II and the desertion of sites at Kea, Kastri and Panormos.

Table 1: Chronological Chart.

	Knossos	Mallia	Vasiliki	Myrtos	Mochlos	Cyclades	Troy	Tarsus	Kultepe	Egypt
2500 BC	South Front Early Houses Deposit		Seager III	Red House(s) West Houses	Destruction by fire ca. 2560/2410 BC	ECII	I		Mound 17-14	Dynasty V
EMIB	RRN, floor V	Destruction by fire			Tombs 1-8, 9, 10, 13, 19, 20, 21, 23			Final EB II Destruction		
2400 BC						Lefkandi I/ Kastri Phases	II	EB III	Mound 13-12	Dynasty VI ca. 2340-2180 BC
2300 BC	Upper East Wall		Seager IV			International contacts		Widespread ceramic connections		International trade
EMIII	SFE Houses Deposits					Kea: Anatolian Contacts				
2200 BC			"poorly built hovels"			Fortifications		Final EB III Destruction	Three destructions in EB II-III	Drought, famine: Social breakdown
2100 BC					"time of retrenchment" Kea deserted		III		Mound 11	F.I.P. ca. 2180-2134 BC
MMIA	West Court Houses	Premier Charnier				Phylakopi Ia	IV		Little sign of trade	Peak period of drought and famine
2000 BC	RR Basement lower level	South Houses	Seager V	Houses A, B, G, Phi, Chi	Tombs 1-3, 7, 11, 13, 16-17, 22		Decline			Dynasty XI
1900 BC	Early West Magazines	Town Group			MMIA building				Karum Kanish II	1963 BC
MMIB-II	Trial KV: Village	Quartier Hu			House D "Cemetery largely abandoned"					Dynasty XII
1800 BC									Karum Kanish Ib	

The following period EC III, ca. 2200–2100 B.C., is even more controversial (Davis 1992: 754). Within the EC III Cyclades, only at Phylakopi on Melos have possible traces of occupation been claimed. Some scholars (Rutter 1984) therefore believe there is a “gap” in the Cycladic archaeological sequence during this phase, that signifies a severe depopulation or abandonment of the islands. Others (Barber 1984) believe the gap is more apparent than real. The latest synthesis (Coleman 1992: 269) opts for a partial depopulation of the Cyclades.

By MC I, ca. 2100 B.C., sizeable towns have sprung up, notably at Kea, Phylakopi and Kolonna on Aegina.

Greek Mainland

While the well-known site of Lerna was destroyed at the end of EH IIA (ca. 2400 B.C.) other Mainland sites, e.g., Raphina and Thebes, seem to experience a smooth transition from EH IIA into the succeeding EH IIB period (Lefkandi I phase), ca. 2400–2200 B.C. (Forsen 1992). At EH IIB Thebes, a new, apsidal type of house appears on the site. Early Helladic IIB burial customs, on the other hand, like those in the EC IIB Cyclades, show no signs of change. EH IIB pottery in central and northern Greece includes a number of new shapes derived from Anatolian types. Some authors (Rutter 1993: 764 and n. 78) have suggested these changes are the result of newcomers, while others (Davis 1987) believe that east-west trade can account for these innovations.

A second cultural phase, the so-called Tiryns culture of EH III (ca. 2200–2100 B.C.), has now been identified on the central and southern Mainland, at a number of sites including Lerna, Kolonna, Thebes and Lefkandi. At Lerna, an earth tumulus was built covering the EH IIA House of the Tiles and apsidal houses and megara-plan houses were built around it. While some EH III pottery is based on earlier EH II traditions, other wares (wheelmade

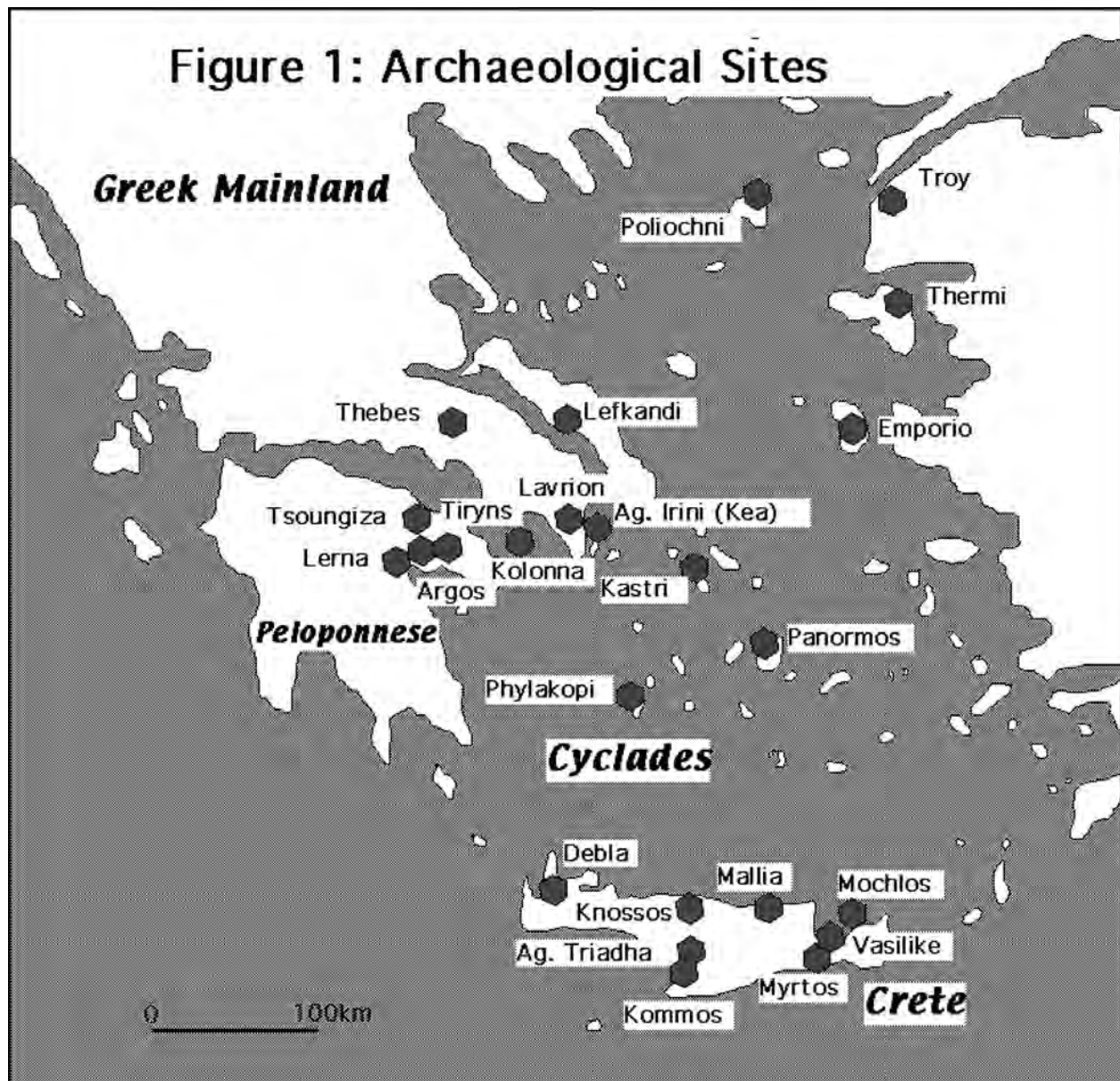


FIGURE 1. Archaeological Sites.

gray burnished and knobbed cooking vases) are distinctively new. EH III burial customs also reveal innovations, include burials in jars or pithoi, an Anatolian practice. The earliest horse bones in the Aegean are known in this period, at Tiryns and Thebes. Many sites in the Peloponnese were abandoned near or at the end of EH III (Rutter 1993: 781). Archaeological surface surveys record a sharp drop in the number of sites from EH II to EH III. For example, the recent PRAP survey in Messenia identified 12 EHII, but only two EHIII (Davis et al. 1997: 418). Two surveys, one in the Skourta Plain near Athens and one in Laconia, found no EH III sites at all. Most known EH III sites are said to be smaller than their EH II predecessors.

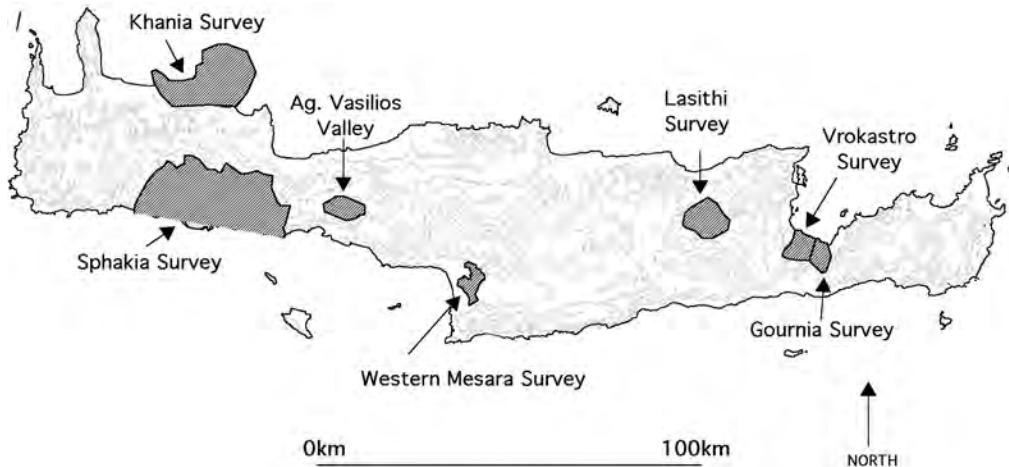


FIGURE 2. Archaeological Survey Areas on Crete.

In the following MH I period (ca. 2100–1900 B.C.), a few sizeable settlements are known, at Argos and Thebes, for example, but many rural areas of the Mainland do not seem to be resettled until later in the MH period.

Crete

During the EM IIB period (2500–2350), certain Cretan sites (e.g., Debla, Myrtos, Vasiliki, Mallia and Kommos) were abandoned, partially or wholly destroyed, or moved to defensible locations. As in the contemporary Cyclades, EM III in Crete is a period characterized by a lack of evidence and ceramic controversy.

Finds from the tombs at Mochlos apparently carry into the period contemporary with EB III in Syria and the Sixth Dynasty in Egypt (Soles and Davaras 1992). Nevertheless, both excavation and surface survey work in East and Central Crete suggest that rural sites were abandoned and population dropped in EM III (Watrous 1994: 717).

Western Mesara (Fig. 2) (Watrous et al. 1993)

For example the Western Mesara survey noted minimal evidence for the EMIII–MMIA periods (ca. 2250–1900BC). Suggesting that many of the smaller sites in the Western Mesara were abandoned at the end of EMII. But it is possible that this gap is more apparent than real, since the EMIII ceramic phase in the Mesara are poorly known. (Watrous et al. 1993: 224)

The subsequent MM IA period lasts from ca. 2100–1900 B.C. At Mochlos (Soles and Davaras 1992: 417) the late pre-palatial settlement and tombs are said to show a “time of retrenchment” and “population decline.” It is clear, however, that for Crete generally the latter half of the MM IA period is one of vigorous revival and renewal of international trade with the Near East and Egypt. Dating for the MM IA period is also more secure, since two Egyptian scarabs of the early Middle Kingdom (probably the 12th Dynasty) have been found in MM IA levels at Lebena on the south coast of Crete. Thus, the period of severest decline on Crete occurs within the period ca. 2200–2000 B.C. probably 2200–2050 B.C.

The scenario in West Crete is somewhat different.

The Khania Survey area (Fig. 2) (Moody 1987, 2000)

For example, the Khania Archaeological Survey Project does not show a drop in site numbers between EMI–II and EMIII–MMI. The recovered settlement pattern suggests one of continuous growth from EMIII/MMI into the Protopalatial period (MMI–II) and particularly the proliferation of small sites (isolated farms and fieldhouses?) in MMI–II. The latter of which mirrors the expansion noted all over the island.

It is possible, however, that the dating approach (ceramic coarse fabric chronology) does not provide specific enough dates to detect the changes. The tumultuous period that is being assessed in this workshop lasted some 300–400 years (11+ generations, given the average life span of Aegean peoples of 28–35 years (McGeorge 1990) as does EMIII–MMI. EMI–II is even longer.

Sphakia (Fig. 2) (Nixon et al. 1990, Moody 2000)

This material is still being studied and hopefully we will be able to refine our dates more in the near future. It would seem that in Sphakia, EM sites are equally common on the coast and in the mountains suggesting widespread use of the landscape. In MM, however, there is a striking decline in site numbers (about 20%) and most of this is a result of abandonment in the mountains. This suggests that the changes in settlement pattern are not due to human conflict, but rather are subsistence based—which could be the result of a change in climate.

Aghios Vasilios Valley (Fig. 2) (Moody et al. 1996a, Moody 2000)

This landlocked valley runs counter to the pattern found in the Sphakia mountains. EMII material is exceedingly rare. Since sites of EMI–II date are readily found to the south (Plakias) and north of the valley (Viglotopi), it is possible that the EM gap is partly due to visibility problems. Periodic scouring and deposition in the valley floor has no doubt erased and/or obscured many sites.

Curiously, MM sites are no more abundant than FN/EMI sites, but they are considerably larger, suggesting a strongly nucleated settlement pattern. This again is very different from the Akrotiri, where small sites were dispersed across the peninsula. The presence of the peak sanctuary at Atsipadhes Korakies also sets this survey area apart from the far west, where the secure identification of peak sanctuaries has yet to be made.

Archaeological summary

Despite the fragmentary nature of our archaeological evidence from the Cyclades, the Mainland and Crete, the three regions seem to follow a fairly similar sequence of events:

- 1) Increasing disruptions amid far flung international connections during EB II–III (ca. 2400–2200), but possibly less pronounced in the western parts of the Southern Aegean
- 2) Widespread desertion of settlements and population loss after 2200, but again possibly less pronounced in the western parts of the Southern Aegean
- 3) The resettlement of sites and the subsequent growth of large towns beginning at least by 2000.



FIGURE 3. Pollen Sites (see Table 2 for number identifications).

Environmental Data

The cultural turmoil discussed above seems to coincide with an equally well-documented period of upheaval in the Near East, Egypt, Turkey and possibly Italy. A sudden aridification of the climate between 3800 and 3600 uncal BP (2300–2000 calBC) has been proposed as the prime mover for the disruptions in the Levant, Syria and Egypt (Dalfes et al. 1997). Depending on which chronology one follows for the Aegean (Table 1), this period correlates with late EMII through MMIA (Warren and Hankey 1989, Watrous 1994: 697).

In our opinion the existence of this cultural and climatic horizon in the Eastern Mediterranean is not in question: what is at issue is its extent and impact. Was the late 3rd millennium upheaval a local, regional or global event? Archaeological evidence suggests that this was a period of significant culture change throughout much of the Mediterranean including the Aegean. But were the disruptions in the Aegean the direct result of environmental change or were they more indirect? Environmental data from Italy (Magri 1997) and Morocco (Cheddadi et al. 1998) suggests the climate shift may be—at a minimum—pan-Mediterranean, but so far supporting evidence has not been forthcoming from the Aegean (Manning 1997, Bottema 1997) or Spain (Lillios 1997).

In this paper nine pollen diagrams from the Southern Aegean were assessed (Aghia Galini, Tersana, Navarino, Osmanaga, PRAP D-4, Kleone Kephalaria, Lake Thermisia, Koiladha, Lake Copais). Two cores from Northwest Greece (Lake Gramoutsis, Rezina Marsh), one from Thessaly (Halos) and seven from Turkey and the Levant were examined for comparative purposes (Abant Gölü, Yeniçaga Gölü, Beysehir, Kaz Gölü, Söğütlü, Bouara, Lake Zeribar) (Fig. 3).

We believe that a significant pattern emerges in support of a more evaporative environment during the latter part of the Early Bronze Age for the cores examined. We also note in many cores an increase in deciduous woodland pollen from ca. 3600 to 3000 uncal BP.

Pollen

Over 10 years ago a horizon of decline and/or disappearance in temperate, deciduous trees dating to the late EBA or early MBA was noted in seven pollen diagrams from the Southern Aegean (Moody 1987, vol. 1: 124–27). Today—with the exceptions of ash and elm—such trees no longer grow wild in Crete. Although the quantity of pollen was quite small, the pattern was consistent over such a large area and at such a specific horizon, that it seemed unlikely to be the result of chance grains blown in from a distance. The reality of this horizon was re-examined for this paper.

In the Aegean, the pollen of some trees and shrubs (especially those near their modern southern limits) can be more reliable climatic indicators than herbaceous plants because there are fewer species and variety options for their identification. The ecologies of tree and shrub species are well known, putting us in a better position for interpreting the meaning of their presence or absence.

It is often claimed that since trees and shrubs are long-lived, their response time to a change in climate will be slower. Although true in a broad sense, pollarding cycles of 20 years have been identified in pollen diagrams from Europe indicating that although the trees do not disappear altogether, their flowering and hence pollen production is dramatically reduced (Anderson 1988). This suggests that it is not so much the tree's response, as the generally coarse sampling method (5+ cm/unit) that obscures these kinds of fluctuations in pollen cores from the Southern Aegean.

Potential climatic indicators will be trees and shrubs intolerant to drought such as *Tilia*, (which no longer grows wild in Crete) and *Fraxinus*, (which has just managed to hang on in north-facing valleys of Crete), and those intolerant to frost (*Olea*). Adaptable trees like oaks are less informative because they can survive extreme conditions. Prickly oak (*Quercus coccifera*), for example, may well be the Mediterranean's most adaptable tree: on Crete it grows from near sea level up to 1728 m.

Method

For the purposes of this paper the cores were especially examined for *betula* (birch), *tilia* (linden), *carpinus* (hornbeam), *ostrea* (hop hornbeam), *coyrlus* (hazel), *fraxinus* (ash), *fagus* (beech), *ulnus* (elm), *salix* (willow), *alnus* (alder) and *olea* (olive) pollen. Most are wetland and temperate trees with varying degrees of intolerance to drought; one (olive) is a xerophytic tree with an intolerance to frost. Of these, birch is somewhat problematic, as it is a good producer and disperser of pollen. Today no species of birch are recorded farther south than a few kilometers south of the Greek/Yugoslav border. Nevertheless a few grains manage to show up in 20th cen A.D. horizons of the Asi Gonia core on Crete, still well preserved after travelling some 600km (Atherden and Hall 1999). *Salix* and *Alder* are wetland trees and their ups and downs can also reflect changes in soil moisture independent of climate. For example a lake or marsh may dry up because of tectonic movements that changed or blocked the outlet of a spring. The consistent decline in *Tilia* pollen has been noted by others, but attributed to a combination of browsing and woodcutting (Turner 1962). This is hard to accept in light of all the other temperate deciduous trees that decline or disappear at the same time. *Tilia* is a very resilient tree that coppices easily when cut. In order to get rid of

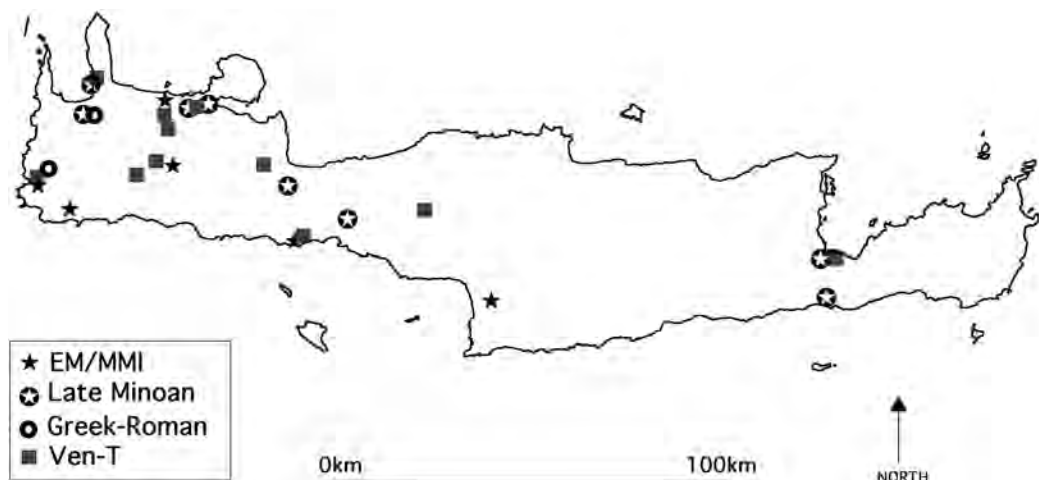


FIGURE 4. Flood and Debris Flow Deposits in Crete

it in a favorable environment, it must be grubbed out by the roots. Although such activity is probably part of the story, it is inconceivable that *Tilia* could grow locally in the modern evaporative climates of Tersana or Thermisia.

Following Bottema (1997), a horizon contemporary with the period in question (2300–2000 B.C.) was defined in each core either directly by radiocarbon dates, or indirectly by calculating a sedimentation rate between two known dates. The spectra present in this horizon were then compared to what came before and what came after, in order to see if it had any defining characteristics. The data is summarized in Table 2.

Pollen Discussion

Prior to the 2300/2000 B.C. horizon, the combination of *Olea* and *Tilia* pollen in a number of cores (Tersana, Navarino, Kleone Kephalaria, Koiladha, Halos) suggests that, unlike the modern situation, precipitation was spread more evenly throughout the year during the Neolithic and earlier Early Bronze Age in the Southern Aegean, and probably reflects a considerably less evaporative climate. The winters could have been no more than 10° F cooler than today's or olive would have been killed by frost; summer temperatures could have been as warm. A similar climate must exist in northern Epirus today, because there in the Acheron Gorge the two trees still grow together on protected cliffs (Moody et al. 1996b).

In the spectra that date between 2300–2000 B.C., 10 of the 17 relevant pollen diagrams examined show a consistent decline in temperate deciduous trees (Tersana, Thermisia, Koiladha, Rezina Marsh, Lake Gramoutsis, Halos, Yeniçaga, Kaz, Sögütlü, Bouara) and in a few cases increases in drought resistant trees (Tersana, PRAP D-4, Thermisia, Abant, Beysehir).

In addition to this, we found that 14 cores show a strong resurgence of many of the absent or declining trees in the spectra that closely follow the end of the focus period (Tersana, Kleone Kephalaria, Thermisia, Koiladha, Lake Copais?, Rezina Marsh, Lake Gramoutsis, Halos, Yeniçaga, Beysehir, Kaz, Sögütlü, Bouara, Zeribar), suggesting a reversal of the 2300/2000 B.C. climatic event in the Middle and Late Bronze Age.

	Betula (Birch)	Fagus (Oak)	Picea (Spruce)	Taxus (Pine)	Larix (Larch)	Pinus (Pine)	Abies (Fir)	Cedrus (Cedar)	Juniperus (Juniper)	Thuja (Arborvitae)	Salix (Willow)	Alnus (Alder)	Ulmus (Elm)	Populus (Poplar)	Fraxinus (Ash)	Quercus (Oak)	Castanea (Chestnut)	Ericaceae (Heath)	Myrica (Sedge)	Other	Comment
1 Diagram name Ağ Gölü general location South central Ery. reference Bortnia 1960, Moody 1987 topograpic coastal plain, prop 500mm how dated extrapolated from two C14 dates 8285±50 acorn rate cm/y 0.2784 2000-1200 BC 1379-1183 2000-2000 BC 1450 Early Neolithic 1500																					Merely dated, but gives a picture of the Final Neolithic vegetation of southwestern Crete. Suggests a dry period during the Final Neolithic.
2 Diagram name Terrassa general location NW Crete reference Quinn 1982, Moody 1987, Moody et al 1996 topograpic coastal plain, prop 500mm how dated extrapolated from two C14 dates 9000±130 and 2110±80 acorn rate cm/y 0.0486 2000-1200 BC 193-186 2000-2000 BC 215-198 2000-2000 BC 263-215																					Grossly limited, no dates are rough, but deciduous trees return in the post 2000-2000BC period and olive becomes common. Rice, Poplar, Myrica also appear after 2000-2000 BC. Some of these trees disappeared before 2000 BC suggesting that the EBA in general was drier than the MSA.
3 Diagram name Navara 8 general location SW Peloponnese reference Kzif et al, Moody 1987 topograpic coastal lagoon, prop 800mm how dated extrapolated from seven C14 dates acorn rate cm/y 0.1270 2000-1200 BC 629-640 Early Neolithic 1100 cm																					This core predates the study period, but gives an idea of what the Neolithic vegetation was like.
4 Diagram name Dimitaki 50 and 15 * general location SW Peloponnese reference Vignat 1972, Moody 1987 topograpic coastal lagoon, prop 800mm how dated bottom of core dated by association with Core 50 acorn rate cm/y 0.2389 2000-1200 BC 506-515/285 2000-2000 BC 576-506 2000-2000 BC 745-576																					Reevaluation of these dates suggests that the bases of Dimitaki cores are Middle Bronze Age and not Early Bronze Age.
5 Diagram name PRAP D-4 general location SE Peloponnese reference Gloger et al 1997 topograpic coastal lagoon, prop 800mm how dated well dated by several C14 dates acorn rate cm/y 0.0213 2000-1200 BC 235-240 2000-2000 BC 266-259 2000-2000 BC 281-266																					Unfortunately only a summary diagram has been published and of our index trees very little is represented. Nevertheless, the olive peak between 2000-2000 BC could suggest a less-fruity climate. The fact that this is contemporary with a decline in deciduous oak could still support a slightly dryer climate.
6 Diagram name Kleane Kephalari general location NE Peloponnese reference Alford et al 1998 topograpic c. 300m spring marsh, prop 500mm how dated well dated with C14 acorn rate cm/y 0.0362 2000-1200 BC 74-74 2000-2000 BC 89-74 2000-2000 BC 96-95																					Very well dated, but contradictory within preservation for the pre 2500 BC event in pollen. Still the contrast between the SBM and PBA levels is striking and shows a strong increase in deciduous trees.
7 Diagram name Lake Iernissia general location Argolis reference Sheehan 1979, Moody 1987 topograpic coastal lagoon, prop 1000mm how dated extrapolated from two C14 dates 4375±90 and 1995±80 acorn rate cm/y 0.1024 2000-1200 BC 401-219 2000-2000 BC 432-401 2000-2000 BC 504-432																					Difficult to get close dates and pollen was sparse, but a general pattern of decline in deciduous trees around 2000-2000 BC is clear.
8 Diagram name Kallithea 85/11 general location Argolis reference Bortnia 1990 topograpic 10.2m bed in Kallithea Bay how dated correlated with C14 from the base of 3 other cores (6600-6800 bp) acorn rate cm/y 0.0636 2000-1200 BC 274-219 2000-2000 BC 295-274 2000-2000 BC 344-295																					Defies all the problems: the HSL analysis is too secure, although the results support a dry event during 2000-2000 BC.
9 Diagram name Lake Capota general location Boeotia reference Gray and Turner 1974, Moody 1987 topograpic coastal lake, prop 1700mm how dated one C14 date 5205±103 acorn rate cm/y 0.0545 2000-1200 BC 112-59 2000-2000 BC 129-112 2000-2000 BC 167-129																					Poorly dated, a never better dated core exists by Allen (1980) which supports the lower part of this diagram, but must follow the period of interest to us.
10 Diagram name Kozani Marazi general location northern NW Greece reference Villis 1992 topograpic 1800m mountain basin how dated well dated, from two C14 dates of 10150±60 and 27990±90 acorn rate cm/y 0.0297 to 1895 2000-1200 BC 646-499 2000-2000 BC 701-646 2000-2000 BC 846-701																					There is a clear decline in temperate trees and conifers, but not all, perhaps post 2000 BC.
11 Diagram name Lake Gramotsi general location southern NW Greece reference Villis 1992 topograpic 280m mountain basin how dated extrapolated from two C14 dates 6350±180 and 1980±190 acorn rate cm/y 0.1172 2000-1200 BC 475-385 2000-2000 BC 506-478 2000-2000 BC 590-506																					In the whole, demonstrates the decline and recovery in temperate deciduous forest very well.
12 Diagram name Halos general location Thessaly reference Bortnia 1990 topograpic coastal plain, prop 1500mm how dated well dated from two C14 dates 9150±100 and 2190±70 acorn rate cm/y 0.0214 2000-1200 BC 277-236 2000-2000 BC 293-277 2000-2000 BC 329-293																					Shows decline and recovery, but in the whole does not discount the event. Perhaps high elevation is affecting.
13 Diagram name Aseni Golu general location N central Turkey reference Bortnia 1997 topograpic 1300m mountain lake how dated well dated by nearby C14 3680±60 acorn rate cm/y 0.0096 2000-1200 BC 56-48 2000-2000 BC 59-56 2000-2000 BC 66-59																					Demonstrates the decline in temperate deciduous forest very well.
14 Diagram name Yedigözü Gülü general location N central Turkey reference Bortnia 1997 topograpic 970m past bog by lake, 400-600mm how dated extrapolated from C14 date 4430 ± 160 acorn rate cm/y 0.0160 2000-1200 BC 63-50 2000-2000 BC 68-63 2000-2000 BC 79-68																					The increase in woodland at the beginning of the Middle Bronze Age is 30-40%

It was thought that a change to a more evaporative and possibly more strongly seasonal climate might also be marked by an increased frequency in flashflood events and debris flows (Van Andel et al. 1986, Van Andel and Sutton 1987). To this end a number of road and gully sections known to contain artifacts were re-examined (Fig. 4).

The BVT flood events coincide with a climate shift known as the Medieval Little Ice Age (LIA) (Moody in press). According to Grove and Conterio (1994, 1995) the Medieval LIA in Crete was characterized by significant winter and spring droughts exceptionally severe winters and summer rain. Frosts repeatedly destroyed olive crops in France and

Italy, but did not affect Cretan olives which flourished (Triandafyllidou-Baladie, 1988). Their assessment of the climate is based on a detailed study of Venetian archives. Letters written between the Dukes of Crete and the Doge of Venice were full of details on the weather because the agricultural productivity of the island was a prime concern of the Empire. This indicates that the Medieval LIA did have a significant impact on the Cretan landscape.

The similar character of the MM-LMIII and BVT flood events raises the possibility of a Little Ice Age event occurring during the Middle and Late Bronze Age (Moody 1997, Moody in press). This is also suggested by the resurgence of deciduous tree pollen in MBA and LBA levels in the pollen cores examined in this paper noted above. Space and focus prevent us from developing this topic here, but see Moody (in press).

Conclusions

In spite of the vagaries of Aegean chronology a pattern emerges from the environmental data suggesting the brief development of a more evaporative climate near the end of the EBA. The decline and—in some cases—disappearance of certain deciduous trees throughout the Southern Aegean, at more or less the same time, is more characteristic of a regional phenomenon such as a climate shift, than the vicissitudes of local human impact through woodcutting.

Whether or not this climate change was of a magnitude to have *directly* and *catastrophically* impacted local cultures in Greece and Crete is more difficult to answer. If the depopulation in the Southern Aegean contemporary with the late EBA aridity event is the result of poor agricultural returns, then one could argue that the climate shift had a direct effect. But, if the depopulation is primarily the result of war, disease and crop destruction due to the influx of peoples displaced from Anatolia and the Levant—peoples directly displaced because of the climate shift—then the climatic impact is indirect. The maximum 20% reduction in precipitation hypothesized for the “2300–2000 B.C. event” would have been unlikely to have a negative impact on areas where rainfall was more than 500 mm/yr. Today this would include most of the north coast, the west, the mountains and the foothills of Crete, the western Peloponnese, Epirus, and most of northern Greece. Furthermore, environmental data indicate that during the Neolithic and Early Bronze Age overall precipitation was greater than it is today, suggesting that most of the Southern Aegean would have experienced sufficient rainfall to have been relatively unaffected by a 20% downfall. A glaring exception is the Cycladic Islands, where some of the strongest cultural discontinuities occur. Parts of east, central and southern Crete may have also fallen within the critical precipitation range. It is very unlikely, however, that northwest or west-central Crete did. These environmental distinctions may be the key to understanding regional differences in settlement history at the end of the third millennium B.C., as well as the varied nature of the disruptions.

The assembled evidence indicates that the Greek Mainland, the Cyclades and Crete were affected by a climate shift at the end of the EBA, but the nature of the impact varies from place to place. Because the Southern Aegean is a land of tremendous topographic contrast and microclimates, it is unlikely that the entire region would be impacted uniformly by a change in climate (major or minor): the 2300–2000 B.C. aridity event seems to be no exception.

Notes

Our expertise lies on the island of Crete, hence we deal with it in more detail. Over the last 25 years, we have directed and co-directed seven intensive archaeological surveys on Crete (Lasithi, Khania, Western Mesara, Vrokastro, Sphakia, Gournia and the Aghios Vasilios Valley) covering over 400 km², or about one-fifth of the island. We gratefully acknowledge our co-directors and participants on these projects especially Oliver Rackham, Harriet Blitzer, Dick and Jean Grove, Barbara Hayden, Lucia Nixon, Alan Peatfield, Stavroula Markoulaki, D. Xatzi-Vallianou, John Bennet, Donald Haggis, Tom Strasser, Julie Clark and those unnamed whose valiant efforts in the field and out contributed to the ideas presented in this paper.

Space constraints prevent the inclusion of the actual pollen diagrams. References to the original pollen diagrams are provided. Most can be viewed in two publications: Moody 1987, Bottema 1997.

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Animal Remains from the Middle Bronze and Iron Age Settlements at Tell Tuqan (Syria)

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Abstract

A preliminary analysis is given of the animal remains from the archaeological settlement at Tell Tuqan (Syria), dating from Middle Bronze Age I-II to Iron Age III. Sheep and/or goat, cattle and pig contributed mainly to the diet of the inhabitants in Tell Tuqan, while wild species are scarce. Among three main kinds of domestic animals, the majority of remains belongs to sheep and/or goat in all phases, while cattle and pig are less represented.

Also in other settlements of northern inner Syria data on the animal food resources in the Bronze Age show that the diet is principally based on domestic animals. Sheep and goat are the main food animals, followed by cattle, while pig is in low percentages. The ratio of these proportions is mainly dependent on the environment and the dry climate in this region.

Introduction

A preliminary analysis is given of the animal remains from the archaeological settlement at Tell Tuqan, excavated by the Italian Archaeological Mission at Ebla during the 1993 campaign (Baffi 1990; 1994). The sample comes from different areas of the settlement, dated from Middle Bronze Age I-II to Iron Age III (ca. 2000–535 B.C.).

Material

Animal remains were not well preserved: the degree of fragmentation is high. Most bones were found imbedded in limestone crystals as if they had been under water. Thus their degree of friability and fragmentation was high and conditioned the bone type frequencies in the sample. The sample analysed consists of a total of 1759 bones, 593 of which (34 percent) have been identified in detail.

Sheep and/or goat, cattle and pig contributed mainly to the diet of the inhabitants in Tell Tuqan, while wild species are scarce (Tabs. 1–3). Sheep and/or goat prevail both in the Middle Bronze and Iron Age (Fig. 1) and are represented respectively by ca. 40 and 54 % of identified specimens. The remains can be referred to a minimum number of 5 individuals (2 adults, 2 sub-adults and 1 juvenile) in the Middle Bronze Age and to 3 individuals in the Iron Age (1 adult, 1 sub-adult and 1 juvenile).

Cattle (27 percent in the Middle Bronze and 30 percent in the Iron Age) and pig (18 percent in the Middle Bronze and 28 percent in the Iron Age) follow in order of importance (Fig. 1). Cattle remains are referred to a minimum number of 5 individuals in the first period

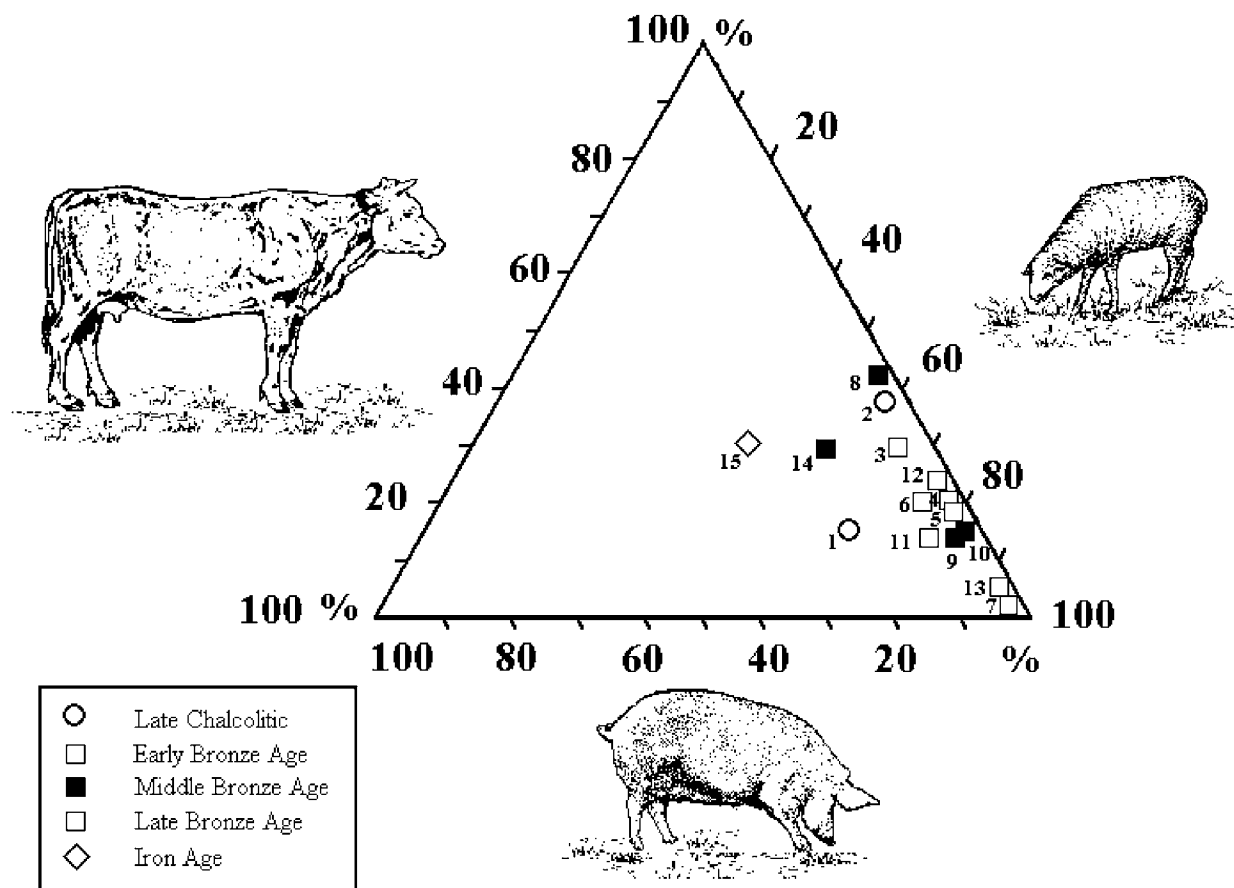


FIGURE 1. Percentage of the three main kinds of domestic animal at Tell Tuqan.

(2 adults, 1 sub-adult, 1 juvenile and 1 new-born) and to 1 sub-adult individual in the last period.

Pig remains are referred to 7 individuals in the most ancient phase (2 adults, 3 sub-adults, 1 juvenile and 1 new-born) and to 3 individuals in the more recent phase (1 adult, 1 sub-adult and 1 juvenile).

Horse remains are particularly present in the Middle Bronze Age and can be referred to 8 adult individuals and 2 colts. It was possible to calculate the withers' height for only 2 horses, according to Kiesewalter's (1888) and May's coefficients (1985), that resulted in 129/131 e 132/135 cm respectively. Small equids were represented in the sample, mostly donkeys or wild asses; their specific analysis is currently in progress.

Dog remains belong to 4 adult individuals; the shoulder height, calculated on two metapodials according to the coefficients set forth by Clark (1995), is about 61 and 43 cm respectively. Rare remains of wild species are present: boar, roe-buck, weasel, birds, fish and frogs.

We can see variations in the presence of birds between the earliest and latest phases. In fact the percentage of wild animal remains amounts to 1.6 percent identified material in the sample of the Middle Bronze Age level and to 22 percent in the sample of the Iron Age level.

A partial skeleton of an adult weasel, well preserved, is particularly interesting. The animal size is very large if compared with European weasels, being comparable with weasels from the Levant (Tab. 4). Van Es (1998) says that the larger size of weasels in the Levant

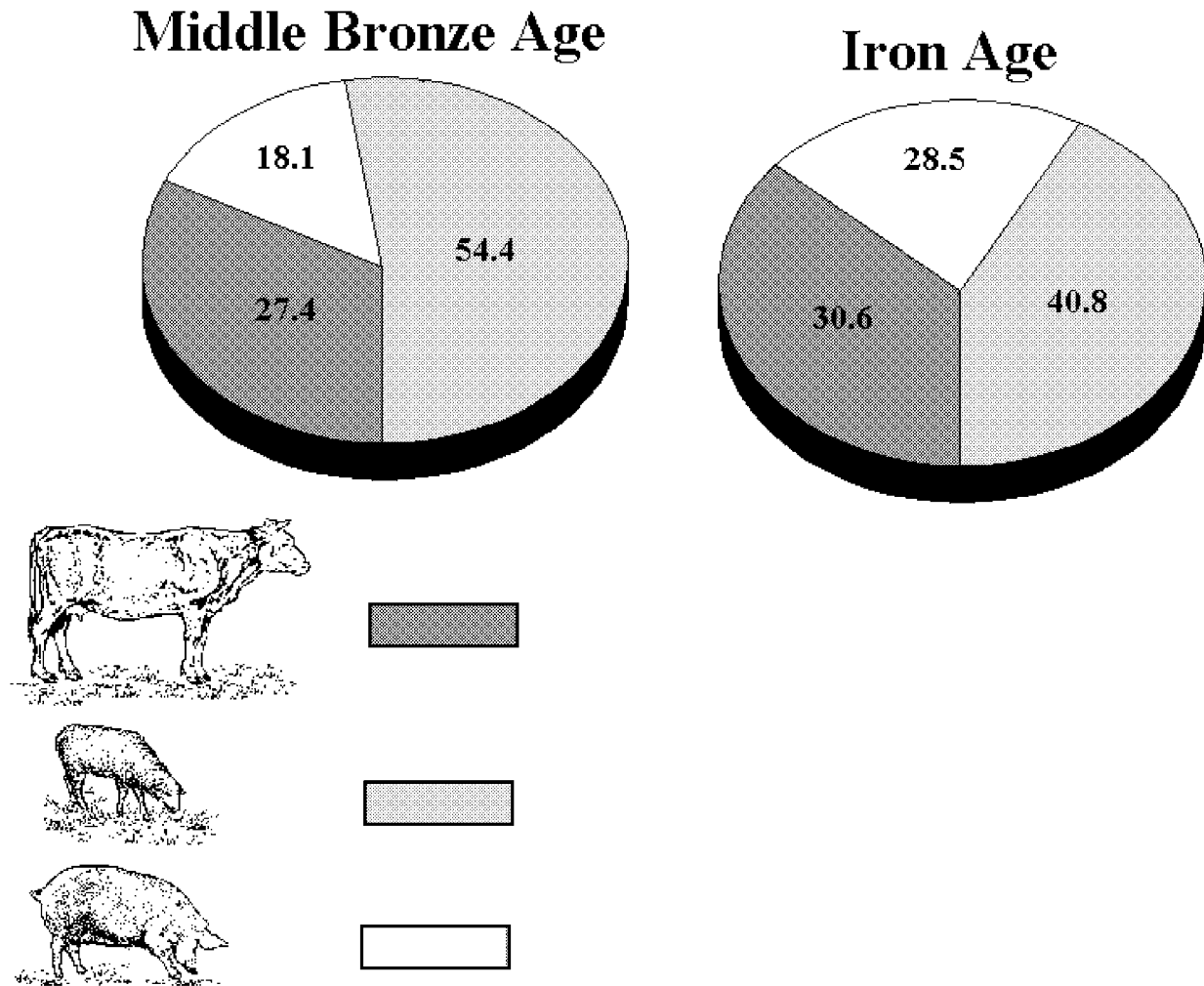


FIGURE 2. Relative percentages of sheep/goat, cattle and pig at several sites of the Northern Syria.

may be dependent on the absence of stoats, which are absent in most of the Mediterranean area and south of the 42° latitude. In fact, weasel may occupy additionally the stoat's niche.

The remains of small mustelids such as weasels are sporadically found during archaeological excavations. It is possible that they were used as a skin source. In fact, skinning marks are most likely to occur on the skull. The weasel remains of Tell Tuqan do not have cutmarks, so we cannot exclude that they are intrusive.

Conclusions

The faunal sample of Tell Tuqan is very small, but let us draw some general considerations about alimentary uses and the animal breed both in the Middle Bronze and the Iron Age. The data on mortality, inferred only by the analysis of the epiphysial fusion of the bones (Tabs. 5–7) are very scarce. However, they show that sheep/goats were bred both for meat production and secondary products, while the relatively high percentage of young cattle suggests a meat production aim for this species. Moreover, on the basis of the minimal

number of individuals and their weight, cattle was the principal source of proteins (about 2/3 of total meat production).

There are not great changes between the two phases of Bronze and Iron Age: cattle and pig remains increase lightly in the last period, but these data could have been greatly conditioned by the small sample and the bad conservation of the faunal material.

In the other contemporary settlements in Northern Syria, economies are similar to Tell Tuqan. Table 3 shows the relative percentages of sheep/goat, cattle and pig remains at the different sites. On this base the graphic of figure 2 was built: every side of the triangle represents the percentage scale for each of the domestic species based on the number of bones. Every site is shown by the cross of its percentage per specie with symbols chronologically differentiated. The graphic shows clearly that from the Late Chalcolithic Age to the Iron Age, the economy was based prevalently on the stock-raising followed by cattle breed, while the low percentage of pig remains might be due to the arid conditions of the region, not very favourable to this species.

Measurements

The measurements (in millimetres) are taken following the methodology proposed by Angela von den Driesch (1976); for the equine's bones are taken also other measurements by Vera Eisenmann (Eisenmann et al. 1988); these are preceded by the letters VE.

Middle Bronze Age

Equus sp.

mandible: 1) (13)=21.8x14.7; (14)=28.8x12.7; *scapula*: 1) GLP=64.6; LG=44.1; BG=35.2; *pelvis*: 1) LA=59.6; LAR=49.1; *first phalanx*: 1) GL=74.6*; Bd=36.9; BFd=34.7; Dd=19.2.

Equus caballus L.

maxilla: 1) (25)=39.7x24.2; (26)=28.9x27; *upper tooth*: 1) (25)=33.2x23.8; VE1=35; VE3=5.8; 2) (30)=24.4x20.2; 3) (25)=34.7x21; 4) (30)=23.1x20.5; 5) (25)=33.5x20.4; 6) (25)=32.3x22.3; 7) (25)=38.3x25.3 ; *mandible*: 1) (9)=30.2x13.7; (10)=25.5x15.8; 2) (14)=25x12.1; *lower tooth*: 1) (9)=29.2x15.2; 2) (14)=33.1x21.4; 3) (14)=27.2x12.7; 4) (14)=26.2x9.7; 5) (9)=28.4x13.5; 6) (9)=24.4x14.9; 7) (14)=25.4x12.5; 8) (14)=31x14.5; *axis*: 1) BFcr=69; *humerus*: 1) Bd=60; Dd=62; DD=32.8; SD=29.7; VE9=37.2; VE10=27; VE11=34 2) Bd=62; Dd=64; VE8=68.7; VE9=42.1; VE10=30.8; VE11=37; *radius*: 1) Bd=61.2; BFd=50.2; VE8=50.4; VE9=30.3; VE10=61; VE11=21.2; VE12=11; *third metacarpal*: 1) GL=211; GLl=208; Ll=205; SD=27; DD=17.9; Bd=38.1; Dd=28.8; VE4=23; VE8=11.8; VE10=37.6; VE11=38; VE13=22.3; VE14=24.8; 2) GL=217; GLl=215; Ll=212; Bp=44.8; Dp=31; VE6=28.4; VE7=36.6; VE8=11.4; VE9=2.6; VE16=9.4; 3) Bp=39.2; Dp=28.3; 4) Bp=40; Dp=26.4 VE6=25.3; VE7=29.3; VE8=13; VE9=4; VE16=7; *femur*: 1) DC=45.4; *talus*: 1) GH=56; GB=48; BFd=39.6; LmT=53; VE4=42.2; VE6=30.7; VE7=41.5; *third metapodial*: 1) Bd=37.2; Dd=28.9; *second phalanx*: 1) GL=41; Bp=38.4; BFp=35.3; Dp=27.4; SD=35.2; Bd=34.6; VE2=36.3.

Bos taurus L.

lower tooth: 1) (10)=35.9x12.7; *radius*: 1) Bd=56.1; Dd=35.9; *metacarpal*: 1) Bd=52.8; Dd=30.1; *femur*: Bd=70; Dd=83.

Ovis vel Capra

mandible: 1) (9)=22.6; (15c)=15.2; 2) (9)=25.1; *scapula*: 1) GLP=30.7; BG=20.5; SLC=16.8; *humerus*: 1) Bd=36.8; Dd=26.2; BT=33; SD=10.2; DD=10.6; 2) Bd=34.6; BT=34.3; Dd=31.2; 3) Bd=30.4; Dd=26.6; BT=28; *radius*: 1) Bp=35*; Dp=11.7*; 2) Bd=32.6; Dd=22.6; 3) Bd=34.2; Dd=23; SD=19.7; DD=12.8; *ulna*: 1) BPC=20; 2) SDO=23.1; DPA=25; BPC=21.3; *femur*: 1) Bd=32.2; Dd=41.1; *tibia*: 1) Bd=29.1; Dd=24.1; *talus*: 1) GLm=25.9; Dm=15.5.

Ovis aries L.

metatarsal: 1) Bd=24.1; Dd=17.

Sus scrofa dom. L.

mandible: 1) 9a)left=32.4; (9)left=47.5; (8)left=61.2*; (10)=28x10.2*; (7)left=92.5*; (7a)left=110*; (8)right=58.8*; (10)right=26.7x11.6*; 2) (10)=32.4x14.5; 3)(10)=26.7x13.2.

Canis familiaris L.

maxilla: 1) (16)=17.2; 2) (16)=18.5; *mandible*: 1) (13)=25.2x10.9; *third metapodial*: GL=78.5*.

Capreolus capreolus L.

talus: 1) GLl=28.9; Dl=16.

Iron Age

Equus sp.

first phalanx: 1) BFp=37.5; Bp=39.5; Dp=29.4*; 2) GL=73; Bp=39.1; BFp=36.8; Dp=27.9; SD=25.9; Bd=34.1; BFd=32.8; Dd=18.3; *second phalanx*: 1) GL=42; Bp=37.6; BFp=34.8; Dp=27.3; SD=33; Bd=34; Dd=21.9.

Equus caballus L.

lower tooth: 1) (9)=28.9x13.6; *humerus*: 1) Bd=65; VE9=41*; VE10=31; VE11=38.3; *pelvis*: 1) LA=50; *talus*: 1) GH=55; LmT=54.9; BFd=40.3.

Bos taurus L.

lower tooth: 1) (10)=37.5x13.4.

Ovis vel Capra

lower tooth: 1) (10)=23.4x8.4.

Canis familiaris L.

lower tooth: 1) (13)=20.5; *tibia*: 1) Bd=19.6; Dd=15.1; 2) Bd=20.3; Dd=15; 3) Bd=22.1; Dd=15.7; *radius*: 1) Bd=20.5; Dd=15; *ulna*: 1) DPA=21.8; 2) SDO=21.2; DPA=24.8; *second metatarsal*: 1) GL=53.

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Tables

Table 1: Number of identified specimens (NISP), relative percentages and minimum number of individual (MNI) per species

	Middle Bronze Age			Iron Age		
	NISP	%	MNI	NISP	%	MNI
horse - <i>Equus cab. L.</i>	225	47.1	10	13	10.6	1
wild ass/donkey - <i>Equus asinus/hemionus</i>	14	2.9	2	5	4	1
cattle - <i>Bos taurus L.</i>	59	12.3	5	15	12.2	1
sheep or goat - <i>Ovis vel Capra</i>	113	23.7	5	19	15.4	3
sheep - <i>Ovis aries L.</i>	4	0.8		1	0.8	
pig - <i>Sus scofa dom. L.</i>	39	8.2	7	14	11.3	3
dog - <i>Canis familiaris L.</i>	7	1.5	2	24	19.5	2
boar - <i>Sus scrofa ferus L.</i>	1	0.2	1	-	-	-
roe deer - <i>Capreolus capreolus L.</i>	2	0.4	1	-	-	1
weasel - <i>Mustela nivalis L.</i>	1	0.2	1	1	0.8	-
birds - <i>Aves ind.</i>	8	1.6	-	27	21.9	-
fishes - <i>Pisces ind.</i>	1	0.2	-	2	1.6	-
frog - <i>Rana sp.</i>	3	0.6	-	-	-	-
molluscs - <i>Mollusca ind.</i>	-	-	-	2	1.6	
Total	477			123		

Table 2: Bone kind frequencies in the different species from the Middle Bronze Age settlement at Tell Tuqan.

	<i>E. caballus</i>	<i>E. asinus/hemionus</i>	<i>B. taurus</i>	<i>Ovis / Capra</i>	<i>O. aries</i>	<i>S. scrofa</i>	<i>C. familiaris</i>	<i>S. scrofa fer.</i>	<i>C. capreolus</i>
cranial bones	-	1	2	2	-	7	1	-	-
cranial bones + maxilla	1	-	-		-	-	-	-	-
maxilla	6	-	1	2	-	3	2	-	-
upper tooth	66	1	8	9	-	-	-	-	-
mandible	31	1	8	14	2	7	2	-	-
lower tooth	47	-	6	22	-	1	-	-	-

Table 2: Bone kind frequencies in the different species from the Middle Bronze Age settlement at Tell Tuqan. (cont.)

unidenti- fied tooth	16	-	3	5	-	-	1	-	-
hyoid bone	-	-	1	-	-	-	-	-	-
atlas	1	-	-	-	-	-	-	-	-
axis	1	-	-	1	-	-	-	-	-
scapula	1	1	2	5	-	3	-	-	-
humerus	4	-	-	6	-	1	-	-	-
radius	4	1	3	10	-	1	-	-	-
radius+u lna	2	-	1	1	-	2	-	-	-
ulna	1	-	2	4	-	5	-	-	-
carpal bones	4	2	2	1	-	-	-	-	-
metacar- pal	5	-	4	4	-	1	-	-	-
pelvis	5	1	2	5	-	-	-	-	-
sacrum	-	1	-	-	-	-	-	-	-
femur	7	1	3	2	-	1	-	-	-
tibia	2	-	2	5	-	-	-	-	-
talus	3	-	1	1	-	-	-	-	1
calca- neus	1	-	1	4	1	-	-	-	-
tarsal bones	-	3	-	-	-	-	-	-	-
metatar- sal	2	-	2	6	1	2	-	-	-
metapo- dial	11	-	-	3	-	1	1	-	-
sesamoid	1	-	1	-	-	-	-	-	-
I pha- lanx	1	1	3	1	-	1	-	-	-
II pha- lanx	2	-	1	-	-	-	-	1	1
III pha- lanx	-	-	1	-	-	-	-	-	-
Total	225	14	59	113	4	39	7	1	2

Table 3: Bone kind frequencies in the different species from the Iron Age settlement at Tell Tuqan.

	E. caballus	E. asinus/ emionus	B. taurus	Ovis / Capra	O. aries	S. scrofa	C. familiaris
cranial bones	-	-	-	1	-	2	-
maxilla	-	-	-	1	-	2	-
upper tooth	1	-	-	1	-	2	-
mandible	2	-	4	6	-	2	-
lower tooth	3	-	1	1	-	1	1
unidenti- fied tooth	2	-	1	-	-		-
atlas	-	-	-	-	-	1	-
scapula	-	-	1	2	-	1	-
humerus	1	-	1	-	-	-	3
radius	-	-	-	-	-	-	2
radius+ulna	-	1	-	-	-	-	-
ulna	-	-	-	-	-	1	3
carpal bones	-	-	-	-	-	-	1
metacarpal	-	-	2	-	-	-	1
pelvis	2	-	-	2	-	-	2
femur	-	-	-	-	-	-	1
tibia	-	-	1	2	-	-	4
talus	1	-	1	1	-	-	-
calcaneus	1	-	-	-	-	-	-
metatarsal	-	-	1	-	-	-	3
metapodial	-	-	-	2	-	1	-
I phalanx	-	3	1	-	1	-	2
II phalanx	-	1	1	-	-	1	1
Total	13	5	15	19	1	14	24

Table 4: measurements in millimetres (following Von den Driesch 1976) of weasel bone from Tell Tuqan.

bone	side	GL	Bp	SD	Bd
humerus	left	31.2	6.2	2.4	6.7
humerus	right	31	6.2	2.5	6.5

Table 4: measurements in millimetres (following Von den Driesch 1976) of weasel bone from Tell Tuqan.

ulna	left	27.7			
ulna	right	27.7			
femur	right	31.8	6.7	2.7	6.3

Table 5: Mortality data of sheep/goat on epiphysial fusion (following Bullock, Rackham 1982) (NF=not fused; F=fused).

		Middle Bronze Age	Iron Age
bone	Age	NF-F	NF-F
humerus d.	-12 months	0-5	
radius p.	-12 months	0-3	
pelvis	-12 months	0-3	
scapula	12 months	0-1	0-1
I phalanx	14-35 months	0-1	0-1
tibia d.	35 months	1-2	1-1
femur d.	48 months	1-1	
metatarsal d.	48 months	0-1	
metapodial d.	48 months	1-0	
tibia p.	48 months	1-0	
radius d.	48-60 months	2-2	
calcaneus	48-60 months	4-0	

Table 6: Mortality data of cattle on epiphysial fusion (following Silver 1969).

		Middle Bronze Age	Iron Age
Bone	Age	NF-F	NF-F
scapula	7-10 months	0-1	
pelvis	7-10 months	1-0	
humerus d.	12-18 months		0-1
radius p.	12-18 months	0-2	
I phalanx	18 months	0-3	0-1
II phalanx	18 months	0-1	
metacarpal d.	24-30 months	0-3	
tibia d.	24-30 months	0-1	
calcaneus	36 months	0-1	

Table 6: Mortality data of cattle on epiphyseal fusion (following Silver 1969).

femur p.	42 months	1-0	
radius d.	42-48 months	1-1	
femur d.	42-48 months	0-1	
tibia p.	42-48 months		1-0

Table 7: Mortality data of pig on epiphyseal fusion (following Bull, Payne 1982).

		Middle Bronze Age	Iron Age
Bone	Age	NF-F	NF-F
scapula	7-11 months		
pelvis	7-11 months	1-1	
humerus d.	+11 months		
radius p.	+11 months		
II phalanx	12-18 months		0-1
tibia d.	19-23 months		
I phalanx	19-23 months		
metacarpal d.	+23 months	1-0	
metatarsal d.	+23 months	0-1	
metapodial d.	+23 months	1-0	1-0
fibula d.	+23 months		
femur p.	31-35 months	0-1	
humerus p.	+36 months		
radius d.	+36 months	1-0	
ulna p.	+36 months	0-2	0-1
ulna d.	+36 months	1-0	
femur d.	+ 36 months		
tibia p.	+36 months		
calcaneus	+36 months		

Table 8: Relative percentages of cattle, sheep/goat and pig at several sites from the North Syria in different periods; (LC=Late Chalcolithic; EB=Early Bronze Age; MB=Middle Bronze Age; LB=Late Bronze Age; IA= Iron Age).

Site	references	period	cattle	sheep/goat	pig
1- Tell Afis 94 (G)	Wilkens 1999	LC	17.2	65.5	17.2

Table 8: Relative percentages of cattle, sheep/goat and pig at several sites from the North Syria in different periods; (LC=Late Calcholitic; EB=Early Bronze Age; MB=Middle Bronze Age; LB=Late Bronze Age; IA= Iron Age). (cont.)

2- Habuba Kabira	von den Driesch 1993	LC	36.5	62.4	1
3- Tell Afis 94 (G)	Wilkens 1999	EB	30.5	64.1	5.3
4- Habuba Kabira	von den Driesch 1993	EB	20.6	78.9	0.3
5- Mumbaqa	Boessneck, von den Driesch 1986	EB	19.2	80.5	0.2
6- Tell Sweyat	Buitenhuis 1986	EB	22.8	76.1	0.9
7- Tell Bderi	Becker 1988	EB	2	97.2	0.6
8- Tell Mardikh-Ebla (F 5861/5701)	De Grossi Maz-zorin, Minniti 2000	MB	42.8	56.6	0.4
9- Tell Afis 94 (G)	Wilkens 1999	MB	15.3	82.6	1.9
10- Habuba Kabira	von den Driesch 1993	MB	14.8	84.7	0.3
11- Tell Afis 94 (G)	Wilkens 1999	LB	12.7	82	5.2
12- Mumbaqa	Boessneck, von den Driesch 1986	LB	23.9	75.9	0.09
13- Tell Bderi	Becker 1988	LB	4	95.6	0.2
14- Tell Tuqan		MB	27.4	54.4	18.1
15- Tell Tuqan		IA	30.6	40.8	28.5

Archaeological Survey Around the Jabal Harûn— Comparison of Methodology and Survey Strategies

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Abstract

This paper describes the survey of the Finnish Jabal Harûn Project (FJHP) and compares its methodology and fieldwork strategies with other survey projects conducted in the Eastern Mediterranean in the 1980s and 1990s. So far, the FJHP has completed three full seasons of the fieldwork; two months each (Fig. 1). The project is directed by Prof. Jaakko Frösén, University of Helsinki, with Dr. Zbigniew T. Fiema in charge of the excavation and Dr. Mika Lavento in charge of the survey work. Prof. Ari Siiriäinen, a specialist in Palaeolithic studies, is the adviser of the team. The survey team consists of six archaeologists.

Survey strategies in the Eastern Mediterranean

The term “survey” refers to systematic fieldwork, the purpose of which is to locate and record archaeological objects, sites and structures. Survey strategy can be approached from three different viewpoints:

- (1) size of the survey area, defined in terms of square kilometers. The smallest surveys cover an area of 2–4 km², whereas the largest may include more than 5000 km².
- (2) survey coverage, i.e., the distinction between total survey and sampling survey. In a total survey, the whole survey area is fieldwalked. In a sampling survey, areas are chosen randomly or on the basis of a specific principle. In the latter case, the survey area is divided into transects, of which only a part, for example every fourth transect, is fully covered by fieldwalking.
- (3) chronological division of interests, based upon specific chronological interest of the survey team. The survey can cover all archaeological periods, in which case all remains of human habitation are investigated with equal attention. A different survey strategy concentrates on a remains representing a specific time-period only.

In the following presentation, modified survey strategies are briefly characterized on the basis of these divisions. Five approaches are identified: (1) large regional surveys, (2) systematic surveys, (3) surveys with a geomorphological approach, (4) intensive surveys, and (5) intensive surveys in very small areas.

(1) *Large regional surveys.* Many regional surveys in the Near East have been carried out with the goal of documenting changes in land use, settlement systems, and the size and distribution of human populations (Banning 1996: 26). Because the number of sites and the

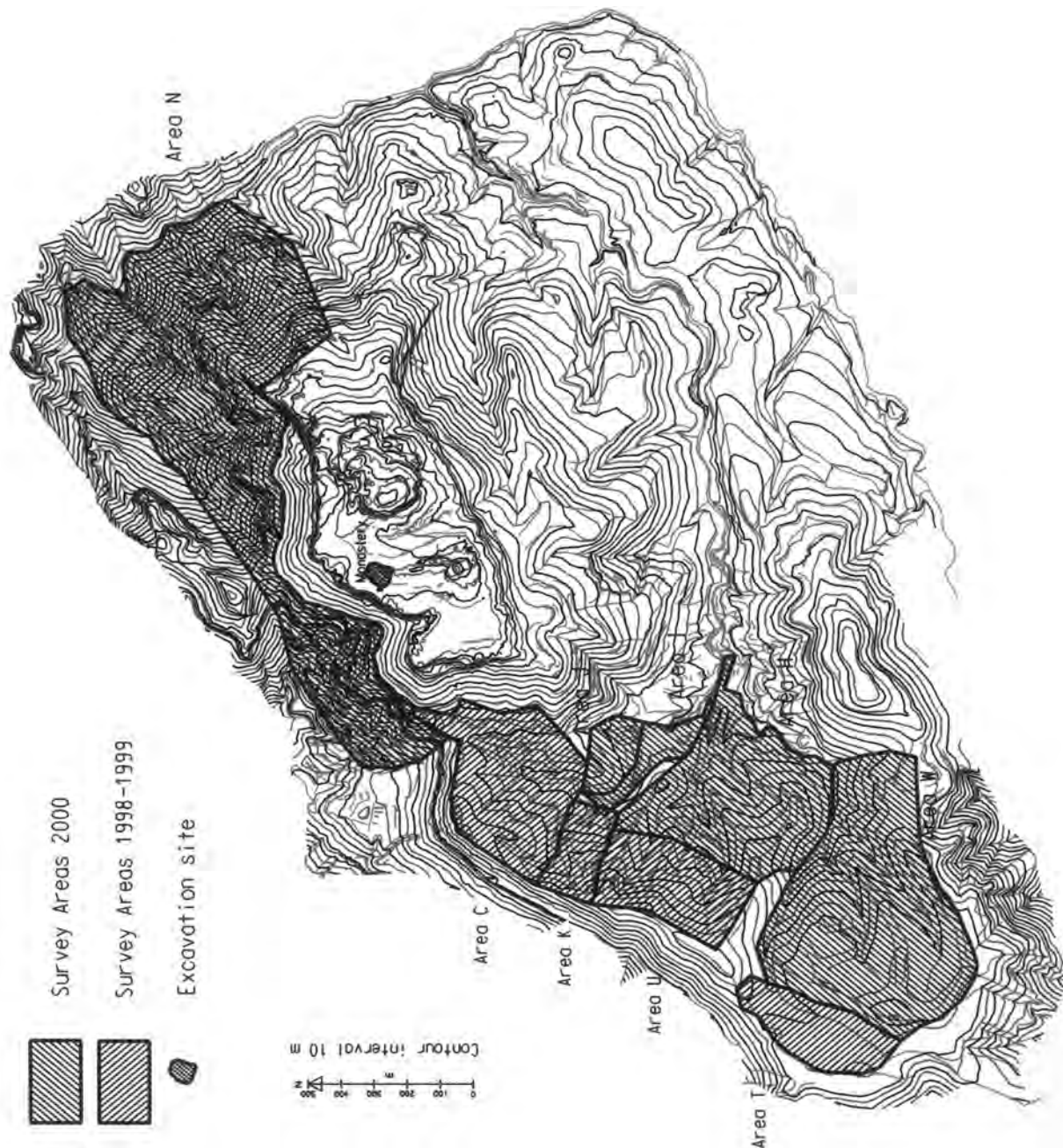


FIGURE 1. Finnish Jabal Harûn Project. Survey areas 1998–2000.

amount of found material are often very large, archaeologists have found it necessary to concentrate on particular issues or chronological periods, for example on remains of Late Palaeolithic habitation. Potential areas for inspection have been sought out by collecting all available material about certain kinds of structures or sites dating to a certain period. Professional map reading combined with an attempt to properly understand the topography and environmental constraints are essential parts of the pre-fieldwork analysis.

(2) *Systematic surveys.* Systematic surveys refer to any fieldwork carried out according to a system that covers the whole survey area. The area can be divided into sub-areas, lines

or target spots. In systematic pedestrian survey, surveyors walk in lines 5–50 m apart (Henry 1995: 7). Many surveys in Jordan have been target spot surveys, where potential areas are investigated with the goal of finding specific kinds of sites and remains (e.g., Garrard et al. 1988: 316; Betts 1988: 369; Olzewski et al. 1998). The survey area is investigated by sampling. The samples (or small areas for closer surveying) can be chosen randomly or systematically by following patterns of topography, soils, bedrock, or other features.

(3) *Surveys with a geomorphological approach.* Currently, the proper understanding of long-term changes in the local environment during the Pleistocene and Holocene is an important part of surveying. Geoarchaeological observations can help in separation of geological formations (where sites are situated), and to indicate their relative dating on the basis of stratigraphy (Besançon et al. 1988: 32). For example, the survey between Ghor es-Safi and Wadi Feinan utilized the following division for the position of sites: (1) agricultural land, farms, orchards, and plantations, (2) gravels, gravel/cobble veneer, and colluvium, (3) sandy areas, including dunes, (4) piedmont, (5) wadi beds and their ridges (MacDonald et al. 1988: 23–24).

An important question related to geoarchaeological studies is the location of sites and whether they are *in situ* or in secondary position (Siiriäinen et al. forthcoming). Geomorphological observations can correlate prehistoric occupation with the paleoenvironmental successions recorded in the stratigraphy, and vice versa (Schuldenrein and Goldberg 1981: 57; Schuldenrein and Clark 1994: 51). Sites can be (1) primary or *in situ* sites, (2) semi-primary sites, in which artefacts are not intact but the site limits are clear, and (3) find spots, which are archaeological scatters on the surface with indeterminate stratigraphic and geological contexts (Schuldenrein and Goldberg 1981: 60).

Understanding human role as an essential factor in the natural processes is a key issue in geoarchaeological studies (Bottema and Worltring et al. 1990). It means the reconstruction of the erosion history in the area by explaining changes in the intensity of habitation interpreted on the basis of survey finds or information available in historical sources. In the Wadi Ziqlab survey, several buried sites were found in a systematic subsurface testing of colluvial slopes and wadi bottom, which confirmed that hillslope processes had distorted the results of the surface survey performed first. In 1992, several landslides occurred in the area, which was studied again in order to identify different slope processes and to discern their impact on site burial, artefact transport and prehistoric land use. The investigations included a geomorphological study of the deposits as well as sedimentological and pedological analyses (Field and Banning 1998: 596–614). The geomorphological record can also help to explain the exploitation of resources, like flint, by delineating artefact zones and scatters (Ohel 1991: 32).

Large geoarchaeological studies have recently been conducted along 75 km in the southeastern Wadi ‘Araba in conjunction with an archaeological survey conducted by the Roman Aqaba Project. The goal of the survey was to place the classical period of occupation in Aqaba within a broader regional context. In addition to geomorphical interpretation of fluvial systems based on aerial photos, the survey included descriptions of sediments and soils at selected sites to interpret changes in the paleoenvironment and paleoclimate of the area. (Niemi and Smith 1999: 792, 796.)

(4) *Intensive surveys.* Intensive surveys, which concentrate on topographically restricted areas, have become more and more common in the 1990s. The questions posed by the intensive survey methodology are not restricted to a particular period or site type, but may, for example, concentrate on the habitation history of the area, as seen from a very long time perspective, e.g., from the Paleolithic to modern times (Alcock et al. 1995).

The intensively surveyed area has usually been divided into transects, where sites are discerned as concentrations of finds. When a sufficient amount of artefacts has been collected, the place is identified as a site (Besançon et al. 1988: 33). Artefact clusters visible on the surface thus define the boundaries of a site. However, site definition is not straightforward. Downslope erosion and other post-depositional processes often displace artefacts and may even cause their multiple-time redeposition (Whalen and Pease 1991: 128). Tracts and sites are recorded, which means collecting basic information on a standard form, drawing all architectural features, and collecting surface artefacts, which are used to date sites (Smith et al. 1997: 46–48).

The term “intensive survey” has been used in different ways in the Middle Eastern prehistoric archaeology. For example, in the Wadi Az-Zarqa/Wadi Ad-Dulayl archaeological project, the intensive survey covered an area of 144 km² (Kafafi et al. 1997: 9), but in the following year the same authors conducted a survey in the area only 8.4 km² in size (Simmons and Kafafi 1988: 28). Recent intensive surveys in Jordan have covered areas between 20 and 50 km² (Palumbo et al. 1990: 95; Palumbo et al. 1993: 307; Cherry et al. 1999; Barker et al. 2000: 29). However, significantly smaller areas of only several square kilometers have also been surveyed recently (Barker et al. 1997: 27). The area investigated by the Finnish Jabal Harûn Project in three seasons covers less than 4 km². In such a case, the term “intensive survey of a very small area” is best employed.

(5) *Intensive surveys of very small areas.* Intensive surveys of very small areas concentrate on specific questions, such as the detailed reconstructions of past behavior. This calls for an approach that uses several kinds of field methods, such as test excavations and hand augerings. Further development of the already used methods is also necessary (Barker et al. 1997: 29; Waheeb 1998: 621). In addition to a large number of finds, the area may contain a large number of structures that need to be documented by Total Station (Palumbo et al. 1996: 376). Other field methods, such as aerial photography, often together with the GIS methods, have been used for locating potential sites before beginning of the fieldwork (Barker et al. 1997: 27). When survey accuracy is increased, also the questions of site sizes and borders demand more attention (Palumbo et al. 1996: 376). The Finnish Jabal Harûn Project is an example of an intensive survey in a very small area. Its strategies and preliminary results are briefly presented here.

The FJHP survey: goals and methods

The FJHP survey focuses on Jabal Harûn, which is located about 5 km SW of Petra. According to Jewish, Christian and Muslim tradition, this mountain is the burial place of Moses' brother Aaron. The FJHP consists of two interrelated and interdependent activities: the excavation of an architectural complex located on a wide plateau at about 1250 m above sea level, and an intensive survey of the mountain and its environs (Fig. 1). The excavated complex most probably represents a Byzantine monastery/pilgrimage center dedicated to St. Aaron (Frösén et al. 1998; 1999).

The purpose of the survey is to locate and record water management sites in order to understand the relationship between the monastery and the human multipurpose agricultural installations in the area. The survey focuses on the topographical description and functional analysis of installations in the area with the purpose of fully visualizing and understanding the dynamics of the system. In addition to this, the survey also studies the general settlement history of the area from Palaeolithic and Nabataean times to the beginning of the 20th century.

Although these basic questions have defined the general orientation and methodology of the survey, many questions have still arisen during the fieldwork. Because field studies have uncovered a considerable number of Palaeolithic and Epipalaeolithic sites, the interests and methodology of the survey have been modified on this basis (Siiriäinen et al. in press). Remains of ancient roads (Zayadine 1992) and buildings (Lindner et al. in press) are also known in the area.

As such, the development of survey methodology has progressed together with the fieldwork. An essential goal is to produce 3D computerized models of the environment, sites, tracts and all human-made structures (Fig. 2). Cartographic research, which is a basis for producing computerized models has been done together with cartographers from the Helsinki University of Technology, supervised by Prof. Henrik Haggrén. Another important component of survey methodology is the study of geomorphology and sedimentation history in the area. These methods are used to generate models for erosion patterns and human influence in the area. They also help to explain stratigraphy and redeposition of material.

The FJHP survey is conducted by walking tracts or transects marked on the map (Fig. 3). The tracts were normally about 60 x 80m in size, with 10 m intervals between the surveyors. The tracts surveyed in the 1999 season were larger than in the previous year, reaching an average size of 200 x 60 m. In the 2000 season, tracts were separated on the basis of topographical features, the inclination of slopes, and other environmental characteristics. Each tract was closely investigated for possible traces of human activities, and subjected to a thorough surface collection of finds. All finds were counted and recorded on a tract form, then subjected to further analyses. Clearly defined concentrations of artefacts or clusters of installations were recognized as archaeological sites. The number and nature of surface finds, geomorphological factors or constraints (such as the location in relation to a wadi or water channel), interrelationships between installations, and the boundaries of the sites were recorded. Once a site was defined, the structures and site boundaries were described, drawn, photographed and mapped by a tachymeter. All documentation is fed into a large Microsoft Access database, which contains the information collected in tract, site and sample forms, as well as photographs.

Preliminary survey results (1998–2000)

Terrace cultivation and hydraulic installations

During the 1998 and 2000 seasons, the FJHP survey was carried out to the west and southwest of Jabal Harûn, between Wadi es-Saddat and Wadi al-Mahattah (Frösén et al. 1998; 1999; and 2000). Most of the recorded structures were barrages built across the main wadis and their tributaries. These barrages served to slow down runoff water and to keep the fertile surface soil in small terrace fields. Barrages are often accompanied by terrace walls following the direction of the tributaries. The number of barrage-terrace installations recorded in 1998 and 1999 is 233. Similar installations have been documented in Sabra (Lindner 1986: 137–138). Computerized models of the hydraulic installations in the environment of Jabal Harûn have been made (Fig. 4; Lavento et al. in press).

Settlement history

In total, ca. 4 km² of the survey area were covered during three seasons. A total of 128 tracts and 111 major sites were recorded. Although the dating of the barrages and terraces remains elusive, the Late Nabataean period appears most consistent with what is histori-

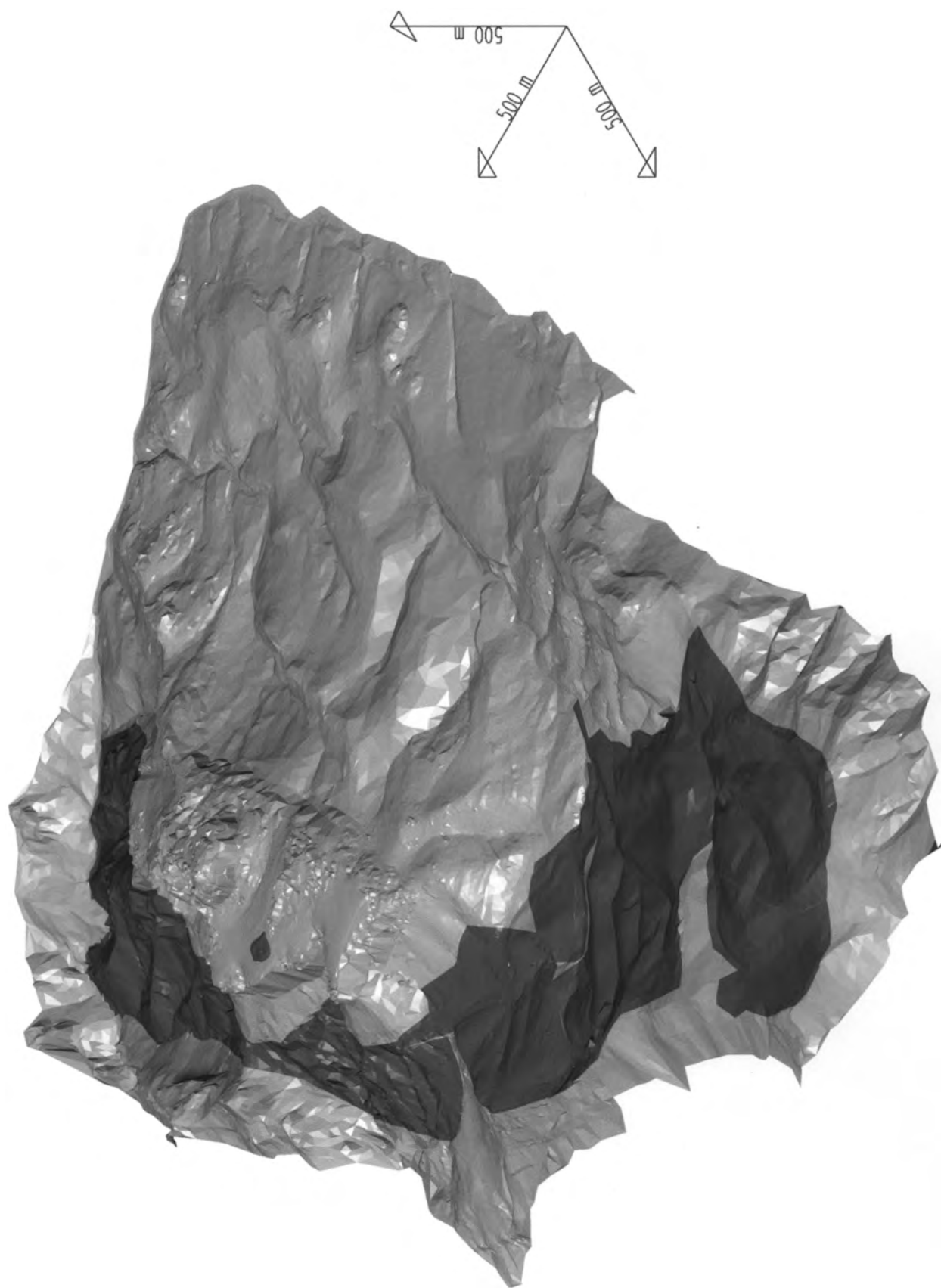


FIGURE 2. In isometric presentation of the survey areas 1998–2000 on the 3D model.

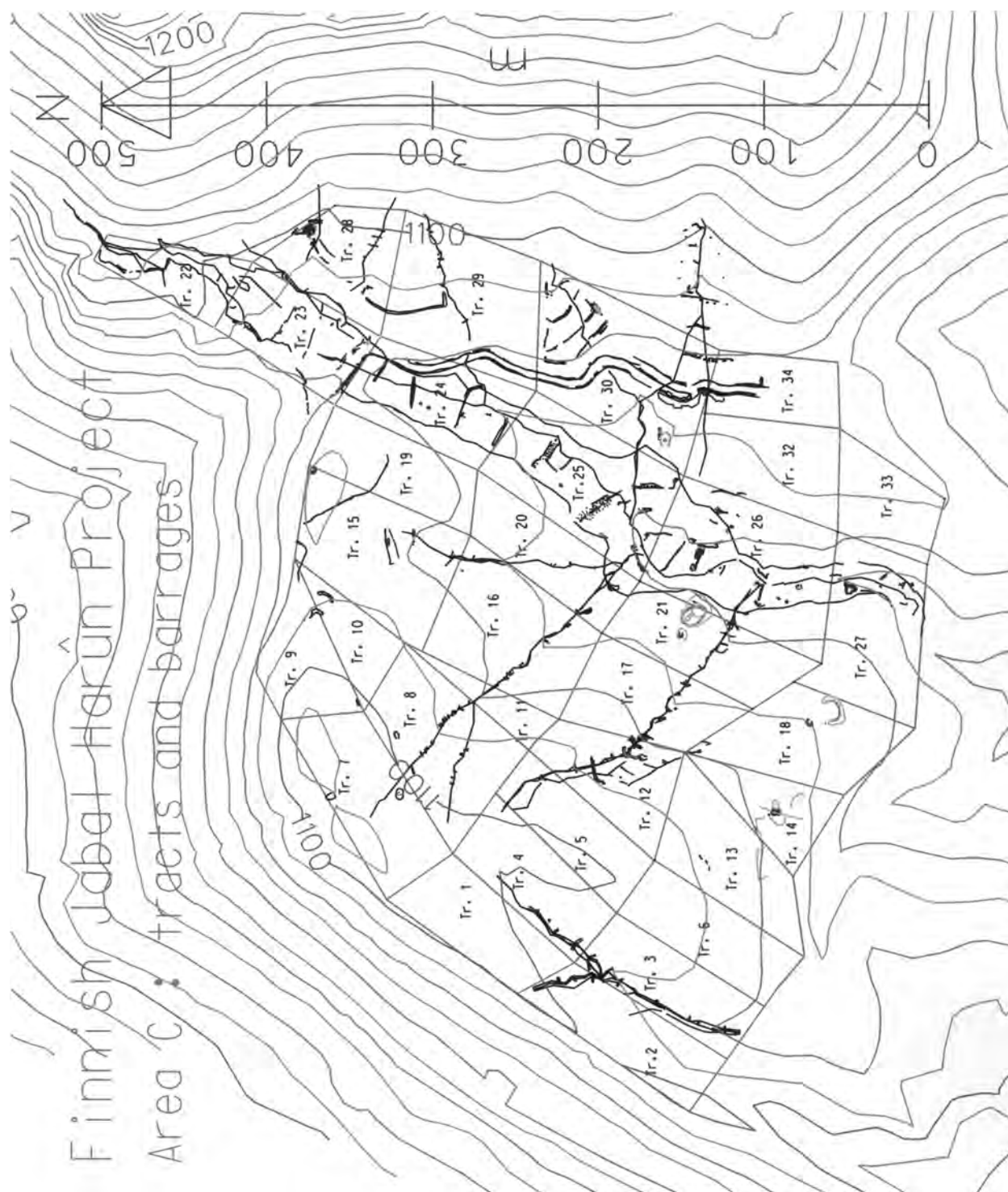


FIGURE 3. Finnish Jabal Harûn Project. Area C: tracts and barrages.

cally known about the development of Nabataean (and perhaps also Byzantine) water management systems.

In addition to hydraulic installations, other sites and structures were also observed. They include four Palaeolithic surface occurrences and a Roman watchtower overlooking the Wadi Araba (Zayadine 1992: 225–226, Pl. V, 1). The remains of two ancient roads have also

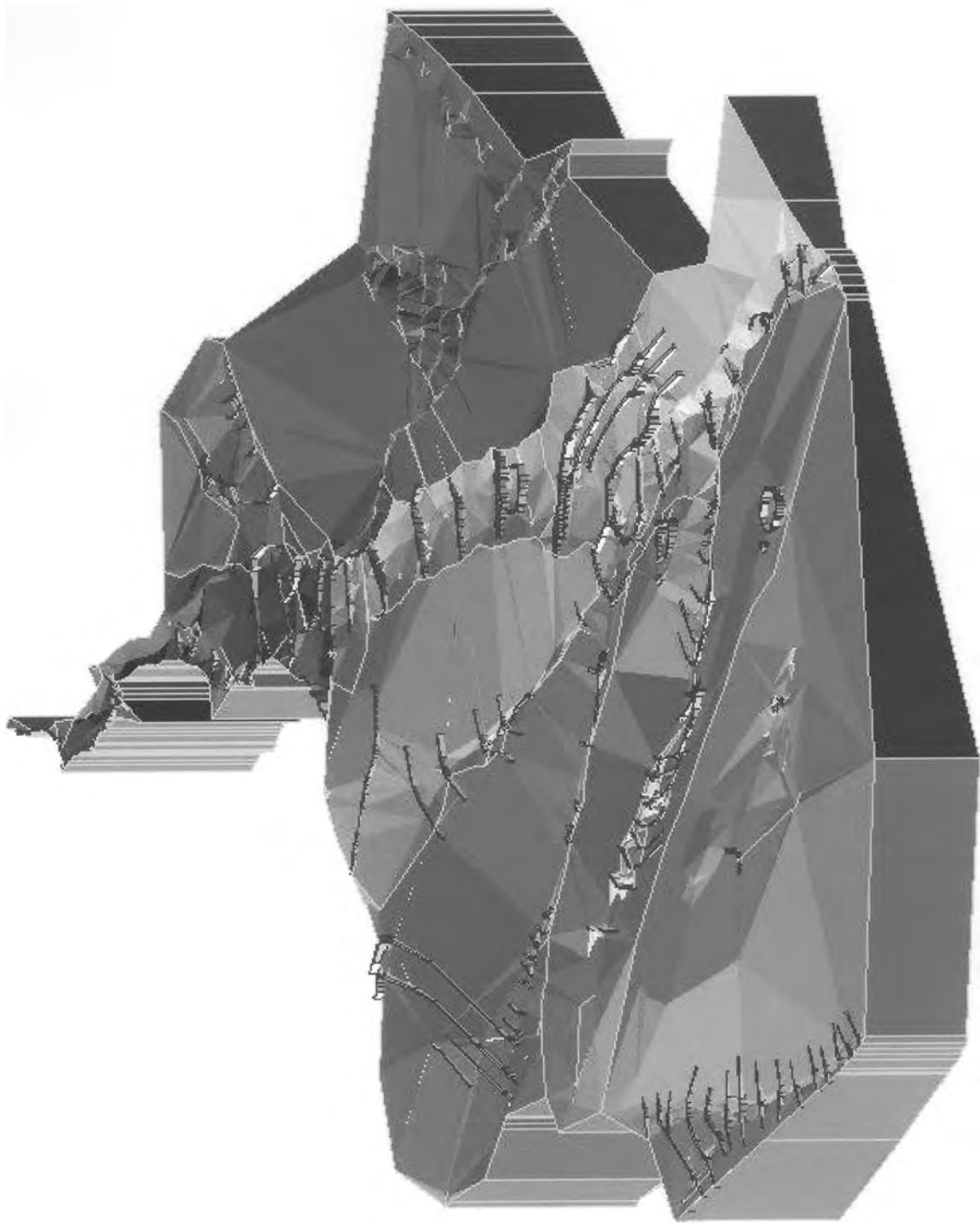


FIGURE 4. A model of the system of the hydraulic installations in the area C (made by architect Aaro Söderlund).

been recorded. The first, stone-paved road comes up from a pass to the valley of Wadi al-Mahattah and continues to Petra, and the second one passes through Nagb Agerrbeh and Wadi as-Saddath towards Petra. Remains of buildings possibly connected to the first road were also observed along its path. An enigmatic and unique rounded stone structure with a “well” in the center was also found in the survey area. The whole structure is surrounded by a

semicircular wall (comp. Lindner and Gunsam 1995). In addition to these sites, petroglyphs were observed on the northern side of the mountain, along the route to the top where the Islamic shrine of Prophet Aaron is located.

To date, surface collection has yielded up to 24000 lithic artefacts. All of this material originates from a more or less derived context that has diffused and changed the original depositional patterns. Part of the material can clearly be defined as Lower Palaeolithic Acheulean and Middle Palaeolithic, Levantine Mousterian, but the majority of it comprises of informal or ad hoc artefacts that are not time sensitive or directly diagnostic of any period or technocomplex. Also Early Neolithic arrowheads have been collected, e.g., a good example of a Helwan type arrowhead. The latter type of artefact has been found only as isolated finds outside any surface concentration of artefacts. No clear Epipalaeolithic artefact concentrations have been recognized yet, even though a Natufian site has been located very close to Jabal Harûn (Gebel 1988: 74–75; Hoffman-Pedersen 1995: 19).

The great majority of pottery finds are Nabataean common and fine ware. A preliminary analysis dates most material to the late first and early second century A.D. Probably, this material also provides a chronological indicator for the early massive hydraulic installations. Structures like these have been built and used in the Middle East since the Iron Age (Oleson 1995: 709). However, in the Negev desert, the Nabataeans began constructing large-scale irrigation systems, including dams and barrages, as late as A.D. 80, during the reign of Rabbel II (Negev 1986: 28). A similar date seems possible also for the construction of the hydraulic installations around Jabal Harûn. In addition to Nabataean pottery, other types were also found, but in very insignificant quantities. Other pottery types include Byzantine pottery, and coarse ware types that may be Iron Age or Islamic in date. There was also one Hellenistic stamped amphora handle; the only piece of Hellenistic pottery found so far.

Geomorphology

Due to the climatological and topographical factors and the properties of the bedrock, the area surrounding Jabal Harûn is very susceptible to erosion. Erosional processes have played a considerable role in the shaping of the landscape and, as a consequence, also in the preservation or destruction of archaeological sites and structures. The objective of the geomorphological research conducted by the survey is to investigate the “natural” erosion and the impact of human occupational and agricultural activities on the environment from the past to the present. This reconstruction can provide information on settlement and land-use patterns, as well as on site formation processes and the formation of artefact scatters.

The topography of the Jabal Harûn area is characterized by hills of varying elevation (see Fig. 2). Bedrock consists mainly of Late Cretaceous limestones and Ordovician to Cambrian sandstones. Underlying the sandstones there are volcanic rocks dated to the Late Proterozoic, representing the earliest stratigraphical sedimentary unit in the area. There are also several occurrences of flint nodules in the limestone bedrock, as well as layers of Amman silicified limestone of variable depth. There is a fault line running through the area, and the lithostratigraphy is very complex. (GS 1992: lithological map).

Hillslopes are often steep, and large wadis have cut deep into the bedrock. Alluvial sediments are few and usually chaotic. The biggest alluvium in the area is at least partially artificially created by building barrages or combinations of terraces and barrages in the bed of the Wadi as-Saddath and at the juncture of two large wadis, the Wadi al Farasa and the Wadi as-Saddath. Colluvial sediments occur mainly in the lower slopes of Jabal Harûn. They are mostly the result of rock weathering and gravity flows, and they consist mainly of

stones and boulders of sandstone. The lack of soil formation indicates that the rate of erosion and accumulation is higher than that of pedogenesis (Lavento et al. 1999). Vegetation in the area is sparse and dominated by shrubs and seasonal grasses. The survey area north of Jabal Harûn is located mostly on the very steep slopes of the mountain, where the bedrock represents Ordovician to Cambrian sandstones and volcanic rocks.

Rains occur almost exclusively in seasonal heavy storms during the winter months, but in some years, there may be no rain at all. As the permeability of the soil is low, it retains only a small amount of runoff water (Lavento et al. in press). Heavy rains produce sheet wash, which washes away sand and fines from the hillslopes, exposing bedrock to further erosion by mechanical and chemical processes (Hassan 1985: 55–56). Runoff water from the slopes concentrates in channels resulting in catastrophic flash floods running downstream. The sudden floods can significantly degrade channels and transport large quantities of sediment even during one rainstorm. Violent rainstorms can also cause catastrophic mass-wasting events with significant erosional effect, such as landslides or slumps (Field and Banning 1998: 596).

The impact of human activity in the past may have both prevented and promoted erosion in the area. As long as the terraces and barrage systems of the area were maintained, they probably had an important role in preventing erosion. Terrace walls slowed down and accumulated the erosional material transported downwards on the slopes. Barrages slowed down the flow of water and the degradation of channels and accumulated alluvial sediments in basins. After the terrace walls and barrages went out of use, erosion has probably increased again with even less vegetation than before to bind soil, which should have led to an increase in sedimentation (Niemi and Smith 1999: 812–813). At the present time, the human impact in the area is mainly erosive, as the grazing of goats causes mechanical wear of the slopes.

Some methods used in the study of erosion in the Mediterranean area, such as the micromorphological investigations and study of paleosoils, may not be suitable in the Jabal Harûn area due to the heavy erosion which has led to the degradation of old soil layers. The valley floor sediments are often the result of only one catastrophic erosional event, and they may not represent long-term sedimentation. Suitable sediment series may still be found in alluvial basins and further downstream. By studying the present erosion and comparing the original sediments, it is possible to gain information also on the past sedimentation and erosional processes as long as the climatological factors affecting erosion have been relatively similar to those of today (Field and Banning 1998: 600–605). Long-term changes are reflected in the climatological reconstructions produced, for example, for the Dead Sea lake levels in Israel (Niemi and Smith 1999: 813). These can be used as a proxy record to draw conclusions about the climate and vegetation in the area in different time periods. The periods of intensive human activity are represented in the find material of the survey area. The impact of extensive land clearance or farming and terracing can also be expected to be reflected on the sedimentary record, but because most of the find material is probably dislocated, it cannot be used for dating sediments. Dating sediments reliably and connecting them to certain periods of human occupation in the area may, therefore, prove to be problematic.

Conclusions

The importance of archaeological surveys is clearly recognized since the 1970s (Alcock et al. 1995: 137). Surveys have become more intensive and they aim to cover the whole area selected. The 1990s surveys have evolved into total surveys of topographically restricted areas,

e.g., involving a valley or a restricted alluvial area. Since the 1980s, geoarchaeologists have played an important role in surveys (Sarris and Jones 2000). Geoarchaeological studies are essential for understanding long-term changes in the natural environment, and they aim at interpreting human influence on nature, exemplified by overgrazing and cultivation, which trigger erosion and may have forced the ancient inhabitants to abandon a particular area for a new one. It is evident that surveys in the Levant have covered larger areas, then, for example in the Aegean region, and survey areas in Jordan are often not as restricted on a geographic basis. However, smaller and more restricted areas have recently been chosen for survey also in the Levant. In practice this means concentrating on valleys, catchment areas, and other topographically delineated areas.

The FJHP survey has concentrated on a very restricted area around Jabal Harûn. The survey areas are divided into transects, which are usually defined on the basis of topography. Microenvironments, such as steep slopes, taluses, small wadi bottoms, or hill plateaus, may also be separated as individual transects. Careful documentation of tracts, sites and man-made archaeological structures is important, because the comparison of features inside the survey area also plays an important role in the study. A basis of documentation is the measurement of structures by Total Station. The aim is to view the environment around Jabal Harûn as a system covering several time horizons with their specific structures. The most conspicuous time horizon is the Nabataean-Byzantine period, during which the massive hydraulic installation system was most likely first constructed (Lavento et al. in press). Paleolithic sites form another system with different types of sites (Siiriäinen et al. in press). An essential part of the investigation is the creation of computerized models from data collected by Total Station and digital photography, which emphasizes the significance of cartographic and photogrammetric methods in survey methodology. Only a few operational photogrammetric methods for archaeological surveys are known so far, which means that further development of these methods is also a central goal of the project.

At the beginning of the project, it might have been tempting to select a more concise strategy for the survey, with a target period or target periods strictly related to the Byzantine period and the monastery located on top of the mountain (cf. Fig. 1). However, it seemed more appropriate already in the initial stage of fieldwork to widen the scope in order to get a complete picture of the cultural sequence, beginning with the prehistoric periods. In addition, by observing the spatial distribution of the abundant lithic material it is hoped to obtain better information of the erosional processes that affect the scattering of the Nabataean and later material as well. As it stands now, the choice of strategy appears well founded, judging from the preliminary results of the first three survey seasons. More information is now available on the pre-Classical periods, and the factors, which cause spatial dislocation of archaeological material in the topography, are better understood.

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An Unexpected Window of Opportunity for Settlement on the Red Sea Coast of Yemen in the Mid-Holocene

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Abstract

The standing stones of al-Midamman (Yemen) have been judged to coincide with the mid-Holocene moist phase in the Arabian peninsular. However, as more work was conducted in 2000, it became apparent that settlement at the site continued well into the 1st millennium B.C., albeit with the use of menhir arrangements replaced by the construction of stone buildings. Since the moist phase had reversed itself by now, another explanation must be sought to explain how this culture sustained itself in what is now a scrub desert. Evidence from the highlands of Yemen shows that the 2nd millennium was exceptionally dry, and erosion through human activity was especially marked. A window of opportunity was created when runoff from the mountains ran unchecked, regularly, as far as the coast. When checks and balances were set up in the mountains, the opportunity for farming the alluvium at the coast was lost.

The site of al-Midamman, Yemen

The Bronze Age menhir culture of al-Midamman was first reported in 1997 following the chance discovery of giant standing stones near the Red Sea (Tihāma) coast of Yemen, southwest of the city of Zabīd (Pringle 1998; Keall 1998). A date of ca. 2400–1800 B.C. is proposed by this writer for the standing alignment, based on typological and metallographic analysis of copper alloy tools excavated from the context of commemorative settings beneath the menhirs at the sub-site of al-Manāṣīb (Keall 1998: 144; Giumlia-Mair et al. 2000: 43). It should be stressed that these dates, and those proposed elsewhere in this article, are so far based entirely on either analytical or comparative typological grounds. No radiocarbon dates exist as yet to substantiate these claims independently. The site generally lacks substantive stratification, and the deflated landscape has made interpretation difficult.

An earlier human presence has been recorded from the general site area of al-Midamman, attributable to the Neolithic. It was suggested at the 1st ICAANE (Keall 2000: 720; 725) that this handful of projectile points and scrapers recovered from today's deflated ground surface reflects in all likelihood sporadic hunting activities. The finds have been classified by Project Lithic specialist Dan Rahimi as belonging to the South Arabian Bifacial tradition of Neolithic technology.

The standing stones (menhirs)

As for the menhirs, what is remarkable is that there is no suitable source of stone within much less than 100 km by land or sea. The largest of the menhirs is estimated to weigh

approximately 6 tonnes. It implies a society capable of assigning resources to support the long-distance haulage required. Perhaps, as an extension of this principle, one may accept the fact that the people involved had entered the area from elsewhere, bringing an established culture with them, which is why they retained the habit of setting up standing stones at such great expense. The Project has yet to resolve whether the logical origins of these people is from the northern Arabian peninsula, or from the African continent.

Equally remarkable is that the erection of the menhirs at the al-Manāṣīb sub-site occurred towards the end of the 3rd/beginning of the 2nd millennium B.C. (For the sub-sites of al-Midamman, see Fig. 1). This contrasts with the more usual Chalcolithic/EB timeframe generally attributed to the famous al-Rajājīl site in northern Arabia (Zarins 1992: 5) and the 4th/3rd millennium B.C. for the Hajar al-Ghayma site closer to home in the Wādī Hāmīlī of the Yemeni Tihāma (Vogt 1998: 124–125).

Buildings constructed with re-used menhirs

It was already reported (Keall 1998: 142; 2000: 723–724) that some of the menhirs from al-Midamman were found in a secondary context, used as part of the footings of a monumental building at sub-site al-Minjāra. There is now incontrovertible proof that the practice of re-using the standing stones was widespread. One may envisage a landscape liberally studded with menhirs. This is confirmed also by their frequent appearance as grave markers in Islamic cemeteries across the region (cf. Keall 1998: fig. 3). In this circumstance it makes no sense that the stones were carried very far. In an ancient context, their re-use is obvious—they represented good quality stone in an area otherwise naturally lacking it. Three buildings have now been exposed at al-Midamman that used stone blocks (two on the al-Minjāra site, and another at the sub-site of Banū Faḍl). The foundations of the Banū Faḍl building were laid with dozens of near-complete and fragmented basaltic pillars (Fig. 2). Building A of the al-Minjāra site had the occasional re-used basaltic pillar in the foundations, but the rest of the stonework below ground was rough-hewn granite (Keall 1998: figs. 6, 8). One may imagine, in fact, that this was stone broken into building-sized pieces from larger granite megaliths. The walls above ground were built from dressed blocks of rhyolite (Keall 1998: fig. 8). Building B, newly discovered in 2000, was built entirely of rhyolite, but of much larger blocks than in Building A. Critical in the attribution of a date for these structures is that fact that fragments of decorated facing-stone were recovered from Building B. This is a particularly distinctive style, characterized by shallowly chiselled lines. The Building B finds (Figs. 3–6) display interlocking chevron patterns and crossed curved lines that can be seen as the intertwined serpents that are characteristic of the temple architecture of the Jawf, on the interior side of the Yemeni highlands, from the period of Maʿīnian ascendancy. The closest parallel to the al-Midamman pieces is from the temple of ‘Athtar at al-Sawdā’ (Breton et al. 1990: Panel E). A date for the al-Sawdā’ site from before the 6th century has been cited by the excavator (Breton 1998: 216). Another version from the Jawf is illustrated from the Temple of ‘Athtar, at al-Ḥazm, by Fakhry (1952: figs. 99, 100).

A site record of late 3rd–early 1st millennium B.C.

In addition, small blocks of rhyolite have been recorded as circular tomb linings that can be associated with a mature ceramic tradition (see Keall 1998: figs. 9, 10) whose best parallels are the Sabir-Maʿlayba corpus of the German Archaeological Institute’s excavations (cf. Vogt and Sedov 1998: 144–151). The beginnings of this tradition are at least as early as the mid-

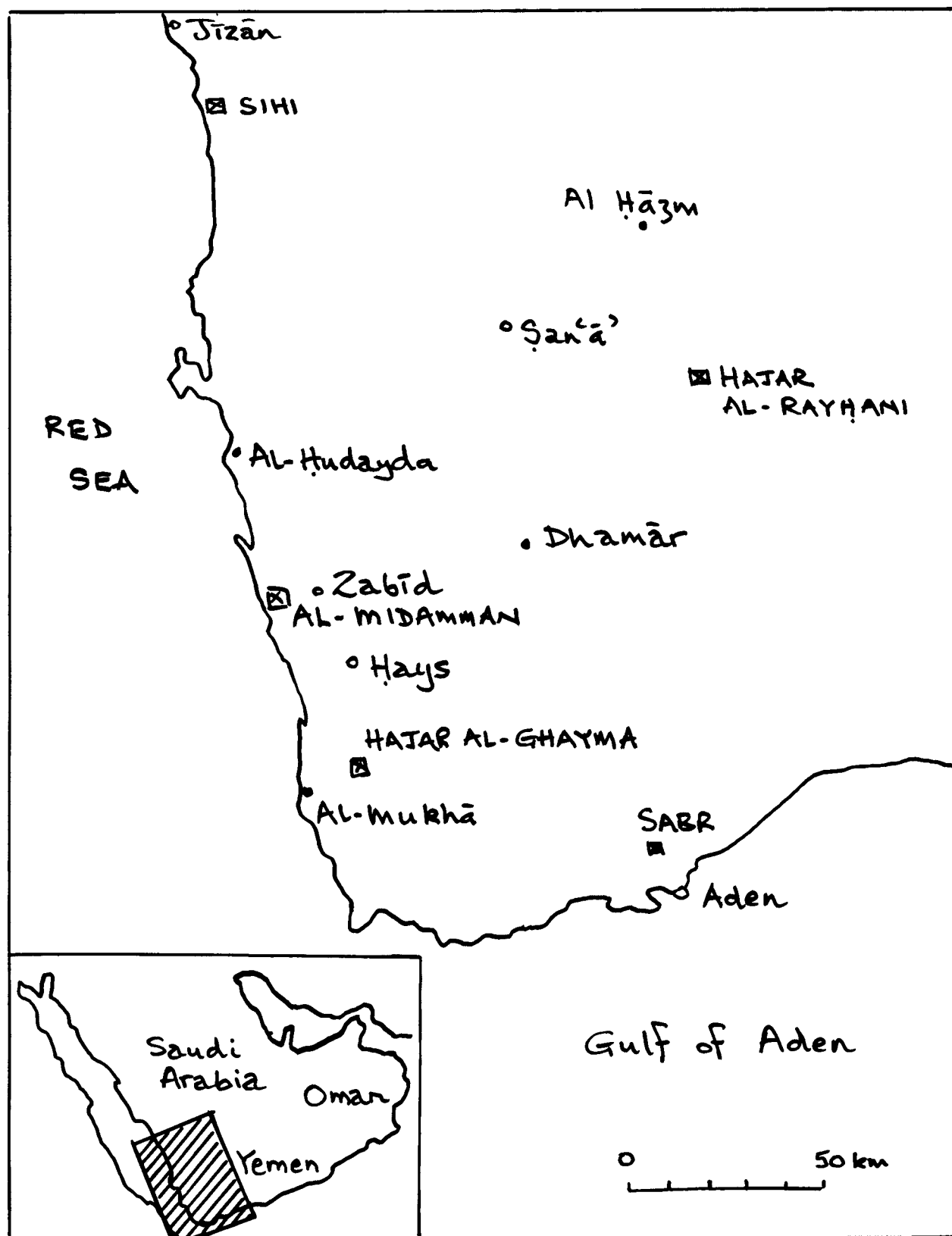


FIGURE 1. Fig. 1 Site of al-Midamman in relationship to sites of southern Arabia.

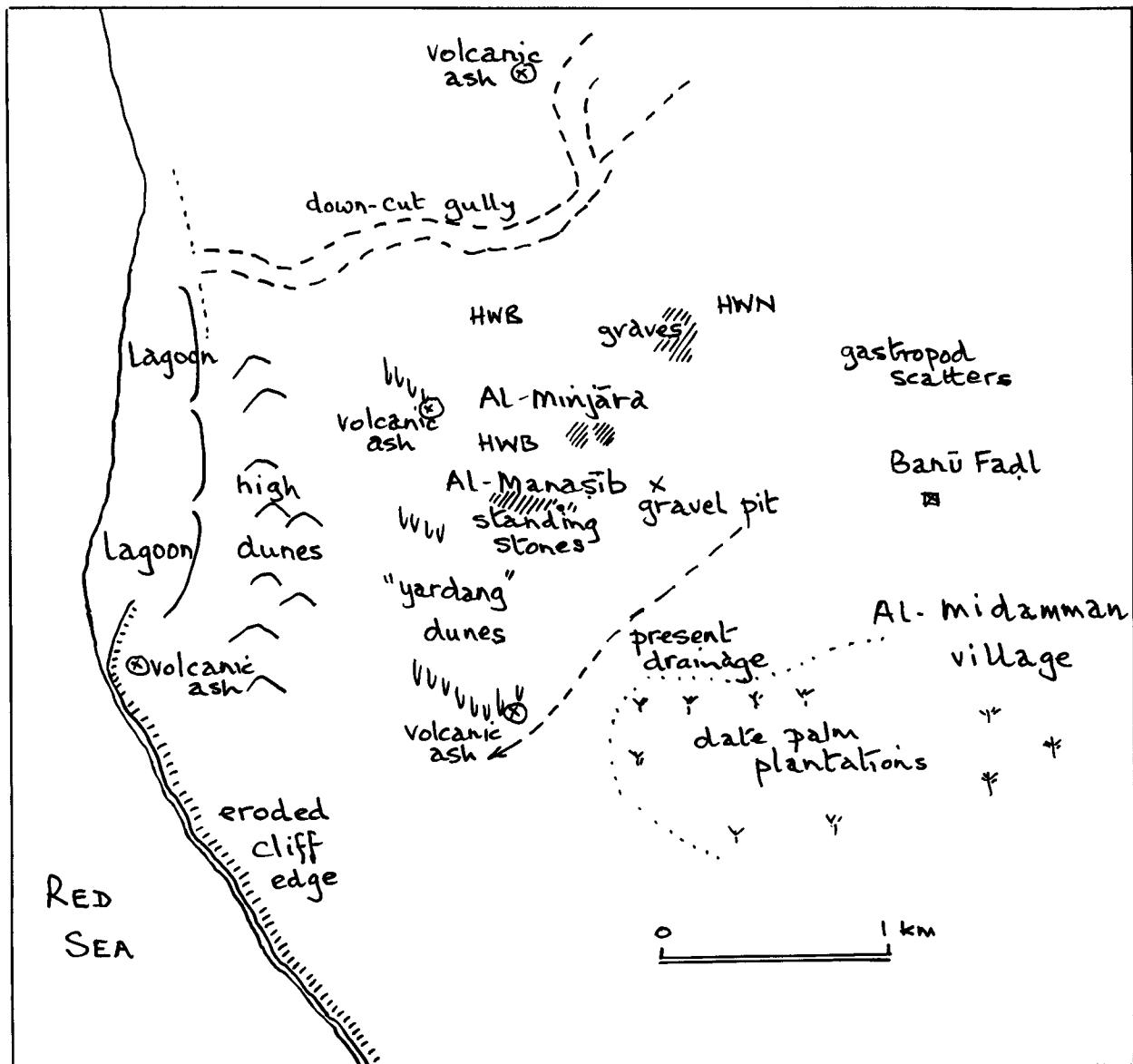


FIGURE 2. Fig. 2 Relationship of al-Midamman sub-sites to coast.

2nd millennium B.C. (Vogt 1998: 127). The pottery from the al-Midamman graves is typologically comparable to that from the nearby widespread scatter of domestic debris. Equally, fragments of copper alloy and obsidian microliths are present in this scatter, something that would be acceptable in a Yemeni context for the late 2nd millennium or even later (cf. Rahimi 1987: 140).

There is ample evidence to suggest, then, that there was an evolution of cultural expression at al-Midamman between the late 3rd–early 1st millennium B.C. One may argue that the destruction of the menhirs represented a wanton obliteration of a cultural habit. On the other hand, the amount of effort needed to smash up the stones seems excessive when judged by how easy it would have been to make a building of sun-dried brick. One may argue, then, that perhaps there was a conscious retention of the menhirs in the buildings, to preserve a memory of the past. This is compounded by the fact that one extremely large (and unique) stone employed in the Banū Fadl structure has a natural shape that may have caused it to



FIGURE 3. Stone-lined tomb with ceramic grave goods.



FIGURE 4. Re-used menhirs in foundation of building of Banū Faḍl sub-site.



FIGURE 5. Rhyolite blocks of Building B, al-Minjāra sub-site.

serve originally as an idol. The effort needed to move this stone into position in the foundations of the building was considerable, and its use was simply not warranted from the structural point of view.

The environment in the late 3rd–early 1st millennium B.C.

While the identity of the al-Midamman society may remain elusive, for the late 3rd–early 1st millennium B.C., we are on firmer ground now with regards to the interpretation of what made it possible to sustain the megalithic culture. Finally we appear to be able to mesh the archaeological record with an environmental one, to explain how people were able to sustain an elaborate culture in what is now a scrub desert. The following observations are drawn in part from discussions held in the field, during February–March 2000, with Project Geomorphologist John Field, and marine environmentalist Eduard Reinhardt. However, the breakthrough in our understanding comes accidentally from the conclusions drawn by Christopher Edens and Tony Wilkinson regarding the results of their survey on the Dhamār plains of the Yemeni highlands (Wilkinson and Edens 1999: 12). Here, unexpectedly, we have the clues as to what provided farming potential at the lower end of the Wādī Zabīd in the 2nd millennium. The reasoning will be given below. Soundings and exposed sections across the site of al-Midamman give us a theoretical geomorphology with the following phases representing the Holocene:

5. Aeolian phase III, to present: solid dune formation; trace of a A.D. 15th century villa high on a dune; sand eroding gradually as “yardang” dunes.



FIGURE 6. Carved stone, Building B, al-Minjāra.

4. Volcanic episode: represented by a band of quartz-rich ash, intermittently across the site, and as far as the coast; dirt matrix definitely different above and below the ash horizon—below, friable sand mixed with silt; above, sand cemented by natural processes, remaining stable for centuries.
3. Aeolian II: intermittent flooding; occasional traces of high volume flooding, with flood gravels deposited.
2. Weak soil formation: soil development associated with traces of human presence (potsherds, shellfish).
1. Aeolian I: questionably the early part of the Holocene, with dry windy conditions, as recorded elsewhere in the Tihāma (cf. Tosi 1986: 404).

Previous attempts by this writer to explain the settlement of al-Midamman focussed directly on the so-called mid-Holocene moist phase as the operative time for a settlement to have sustained itself at the coast (Keall 2000: 725–726). It may be convenient to repeat here



FIGURE 7. 15th century occupation on stabilized dune, Aeolian III phase.



FIGURE 8. Weak soil (pre-Aeolian II), and volcanic ash layer (pre-Aeolian III).



FIGURE 9. Relic gastropods from Aeolian II phase (with flooding).

that the standard theory is that there was a northerly displacement of the Inter-Tropical Convergence Zone between ca. 7000–4000 B.C. (albeit the precise dates cited vary), leading to increased monsoon precipitation in the Arabian peninsula (McClure 1988: 9; Cleuziou and Tosi 1997: 122; Lezine et al. 1998: 290). For the interior of Yemen (rather than the central Rub al-Khali), one may modify the date as ca. 6000–3000 B.C., with a maximum at ca. 3750 B.C. (Cleuziou et al. 1992: 5). In either event, the timing of the notorious moist phase is too early to mesh with the major al-Midamman settlement. Certainly, the increased precipitation in the mountains in the 4th millennium, even if it did not increase measurably at the coast, would have resulted in a much higher water table. Rich vegetation cover in the mountains would have retarded runoff and helped maintain a perennial flow of streams at the edge of the piedmont. Near the coast, we can expect the influent stream bed of the Wādī Zabīd to have maintained a strong underground flow. The impact would have been likely to sustain a level of water above the 8 metres or so depth below ground that existed even in recent times. This would have allowed deep-rooted vegetation to flourish, and it is hypothesized that this helped form a weak soil in Phase 2, which we may therefore tentatively identify (on the basis of the Dhamār paleosol) as being commensurate with the Neolithic.

The massive settlement activity at al-Midamman appears to start in the 3rd millennium, at a time when generally commentators refer to the on-set of drier conditions (Wilkinson 1996: 299). Wilkinson and Edens (1999: 2–3) refer to a fairly stable humic soil horizon on the Dhamār plains which was then subsequently covered by an aeolian deposit “during or after”



FIGURE 10. Present-day seepage of fresh water from influent Wādī Zabīd stream at coast.

the 2nd millennium B.C. Elsewhere they also report that this loess accumulation is associated with human-induced erosion and increased runoff (Wilkinson and Edens 1999: 12), starting as early as 3000 B.C., and increasing in intensity in the rest of the Bronze Age. The implications are at first contradictory for the potential for settlement at al-Midamman. Nevertheless, in a reversal of what one might have expected, the geological record shows us that (probably in the 2nd millennium) flooding at the tail end of the Wādī Zabīd was actually so severe that one can observe in a dug gravel-pit the characteristic “anti-duning” profile of gravels carried with such force that the water formed waves. It is here, then, in Phase 3 (Aeolian II), that opportunities existed for farming the deposited alluvium. Enough evidence has been recorded to show that, in some areas, flooding left wet lands for a while at least, so that communities of terrestrial gastropods were able to colonize the landscape. Occasional pockets of friable soil are preserved with the snails intact, especially towards the east (upstream) side of the site. These fresh-water snails are generally characteristic to-day throughout Yemen for indicating wet conditions, especially in the context of irrigation canals.



FIGURE 11. Quarry from Aeolian II phase.



FIGURE 12. Detail of anti-duning gravels in quarry.



FIGURE 13. Stream wash in eroded sea-cliffs at coast.



FIGURE 14. Detail of stream wash in sea-cliffs.

Evidence of the force of the flood water—namely that it could reach the coast, which is to-day unprecedented, except in absolutely exceptional (once a century) circumstances—can be observed in the eroded cliff at the beach's edge. Here, thick bands of alluvium exposed in cross-section reveal the characteristics of stream wash. The transported debris includes the occasional broken-tipped Terebralia shell, characteristic of the main al-Midamman site where they are found scattered from isolated middens. (In the 1997 program they were a confusion, leading to theories about mangrove lagoons inland. These theories have now been definitively diffused, replaced by the idea that the Terebralia were harvested at the coast, transported inland, and dumped in small middens across the landscape).

Back of the edge of the eroded cliffs is to be found a thick band of volcanic ash which has been identified elsewhere, albeit intermittently, right across the district. The ash (of Phase 4) does coincide with worsening environmental conditions, marking the end of the intensive settlement. But the volcanic episode it represents is unlikely to have been catastrophic. Rather, we should follow Wilkinson and Edens (1999: 12) and recognise that the worsening conditions in the highlands forced the inhabitants to find adaptive strategies for survival. Checks and balances began to be placed in the run-off streams, in order to direct them to useful purpose. Eventually, large-scale engineering schemes were developed in the late Iron Age (1st–5th centuries A.D.) which started to make a difference to the amount of water suddenly shed from the mountainsides. Extensive terracing, and the diversion of run-off into catchment basins, began to stabilize the landscape. These are the schemes which we associate, in particular, on the west side of the highlands with the Himyarite dynasty. Ironically, the environmental disaster of the mountains had been a temporary boon for those able to settle at the coast. With the controls set in place, the result downstream towards the coast was that the window of opportunity for life as it had been known, ceased.

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Climate, Weather and History

(Summary of a Workshop Held on May 23rd 2000)

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The Workshop met with the goal to discuss the interconnections between climate, weather, and human action in different regions of the northern hemisphere, Africa, Europe, the Near East and Central Asia.

The consequences of the influence by weather, climate, and anthropogenic action are manifold and not easy to explain from the known archaeological material. Written sources are limited in time and from some areas only—and there the chronology leaves room open for critical remarks.

The dates won from texts for Mesopotamia and Syria are up to now undisputed only back to 1400 B.C.—for the times before four different scales are given differing from each other up to 350 years. C¹⁴-Dates are valuable within a wide range—and dendrochronology should be disputed for arid areas where irregularities of rainfall change the speed of growing wood, giving up to three “yearrings” for one year or one for at least two years.

The climate and its influence on vegetation, aridity or humidity are fluctuating especially through the relatively badly known change or development of aerial circulations. For settled communities fluctuations of climate may change the ecology. The answers will be different according to the circumstances and the possibilities to react. Farmers will try to stay as long as possible, while herders are more mobile and forced to be so. They are more sensitive for weather events cutting off themselves or their herds from food or water so that shorter anomalies may inflict them more than farming communities. Such short-term anomalies will not be reflected in archaeological material.

Changes in the ecological conditions of life for longer periods may disrupt settled life, too. The greatest migrations of the last millennia recorded by historical reports were based in many cases on climatic fluctuations, desertifying certain semiarid areas forming the great historical phases all over the northern hemisphere—whereby the forcing events happened in main far away from the literate societies where only the consequences were felt later on.

The consequences of worldwide fluctuations going back to geoclimatic reasons were felt in different areas varying forms and results. There seems to exist a zonal regime from east to west, differentiated, too, by highlands and through the interrelation with oceanic regions. The cultural development after the postglacial optimum shows at least two cold epochs before the Ancient World—the centuries around 2000 B.C. and the period from 1350 to 900 B.C. During the first one the Indus civilization vanished, the urban civilization in Southern Turkmenia broke down, the Sumerian culture fell under Amurru invaders, the crisis shook Egypt for centuries, the Western Sahara was left and the Sahel retreated in the eastern part about 200 km.

The second period saw the end of the Yin dynasty by the Chou invasion, the appearance of the Iranians in the highlands east of Mesopotamia and the Aramaeans occupying wide

regions of Mesopotamia and Syria. The Hittite civilization was smashed—and Egypt was attacked and taken over by Libyans and later on by Nubians.

The former inhabitants of arid areas had to move and the irrigation-based economy of the riverine states was enlarged as an attempt to overcome the rising aridity. But there came salinization for example in Mesopotamia. In the southern parts of this country there were found fields one meter below today's sealevel. On a smaller scale such developments could be observed during the "Little Ice Age" between 1500 and 1750 A.D. in the Middle East. The tribes of the Anezeh had to leave Nejd and occupied the southern shore of the Gulf region, Syria, Jordan, and the Negev.

Corresponding events are known for the Sahel, Northern Africa, Central Asia, and China. While a cooling climate brought aridity to the southern deserts and steppes, in Central Asia a cooling down seem to have been accompanied by the rains of the westerlies to the nowadays desertified regions east of the Southern Urals. The Taiga was moving southwards by 150–200 km covering the former wooded steppe, a settled region during the Bronze Age with cold and wet forests—an pushed this habitat towards south. This fluctuations of the southern border of the Taiga might explain even the movement of the Indo-Iranians from Eastern Europe to Asia in the 6th and 5th millennium B.C. the forest border run from the White Sea to the Middle Ural, but moved down to a line from Southern Ural to the Middle European mountains limiting the agrarian usable region to the Ukraine and parts of Central Europe.

Another ecological system ruled east of the Altai. The southern border of permafrost was the limit of agriculture even in ancient deserts. The frozen soil kept the limited precipitation in the upper level of soil where it could be reached by vegetation. A warming up of the area brought more rain—but an increased evaporation so that the vegetation vanished more and more.

The Bronze Age culture of Mongolia—the Karasuk culture—of the second millennium flourished partly in present deserted regions and moved towards northeast and then to the west.

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Desertification and Cultural Activity—Interactions in the West African Sahel

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Abstract

The Sahelian ecosystem of West Africa is one of the oldest landscapes cultivated by man. In an area exposed to extreme climatic changes between dry and humid conditions, man and nature have been interacting for more than 100000 years. Major empires dominated the West African ecosystem in the last 2000 years, exposed to periods of drought of increasing severity. Since the middle of the last century we can observe a dramatic decrease in annual rainfall and at the same time an extreme increase in population accompanied by the depletion of natural resources. Today the Sahelian zone is described as a “given-up periphery,” the World Wildlife Found for Nature identifies the Sahel as a desert in its map of endangered ecosystems.

In this paper the human impact on a selected region in Mali is documented using remote sensing data over fifty years, together with historical documents, rainfall data and extended field research. The interaction between desertification processes and culture/civilisation are considered.

Introduction

The Sahel region today is closely associated with hunger, drought, underdevelopment and from the economical point of view considered as completely unimportant. Still 500 years ago this region was one of the highest developed centres in terms of culture, education and economics in the world. This region formed part of some of the biggest trade routes (transsaharian trade). Until Columbus’ discovery of the Americas, Europe obtained its reserves of gold from West Africa via the saharian trade routes. Arabic merchants transacted in this business between Europe and Africa and from Arabic merchants and travellers we have the first knowledge of the big empires during the Middle Ages. In the fourteenth century a king of the big empire “Mali”, Mansa Moussa undertook a pilgrimage to Mekka with thousands of personnel and a huge amount of gold, crossing the Saharan desert, which was surely not so and as it is today. On his way back he left so much gold in Cairo, that the price for gold was demonetized for several years. Its predecessor, (Ki-Zerbo 1992) had tried to cross the Atlantic ocean with 2000 ships and didn’t return from this itinerary. In this paper the interaction between cultural activity and desertification is discussed on the basis of a selected region in Mali west of the “Canal du Sahel region” with the village Sokolo (Fig. 1). This region formed part of the big empires Ghana, Mali and Songhai and were therefore shaped by these cultures. During colonial time this area was chosen by the French colonialists for their largest agricultural project. The 20th century is well documented by e.g., rainfall data from the first half, aerial photographs from the early fifties on, as well as satellite

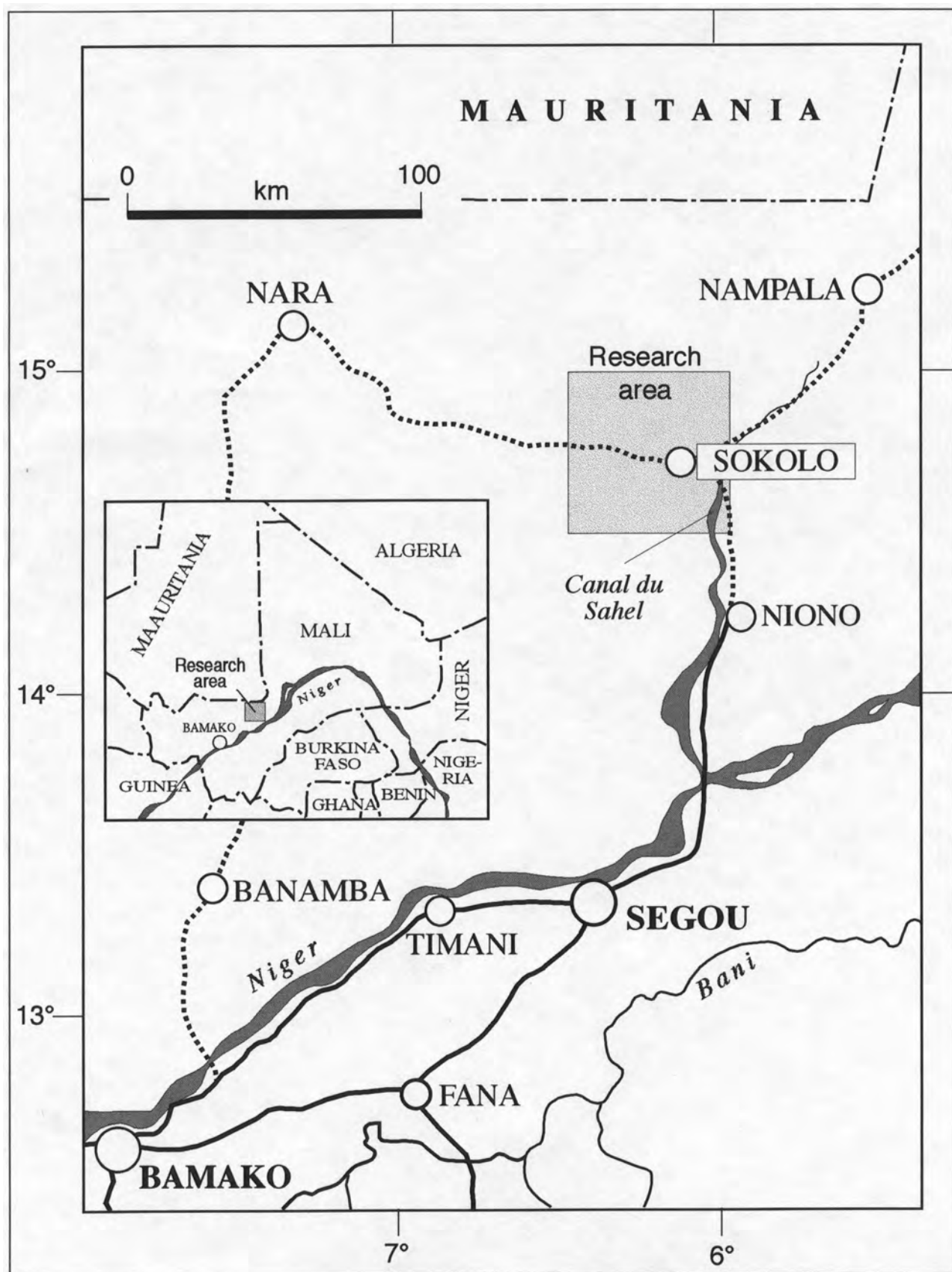


FIGURE 1. Research area.

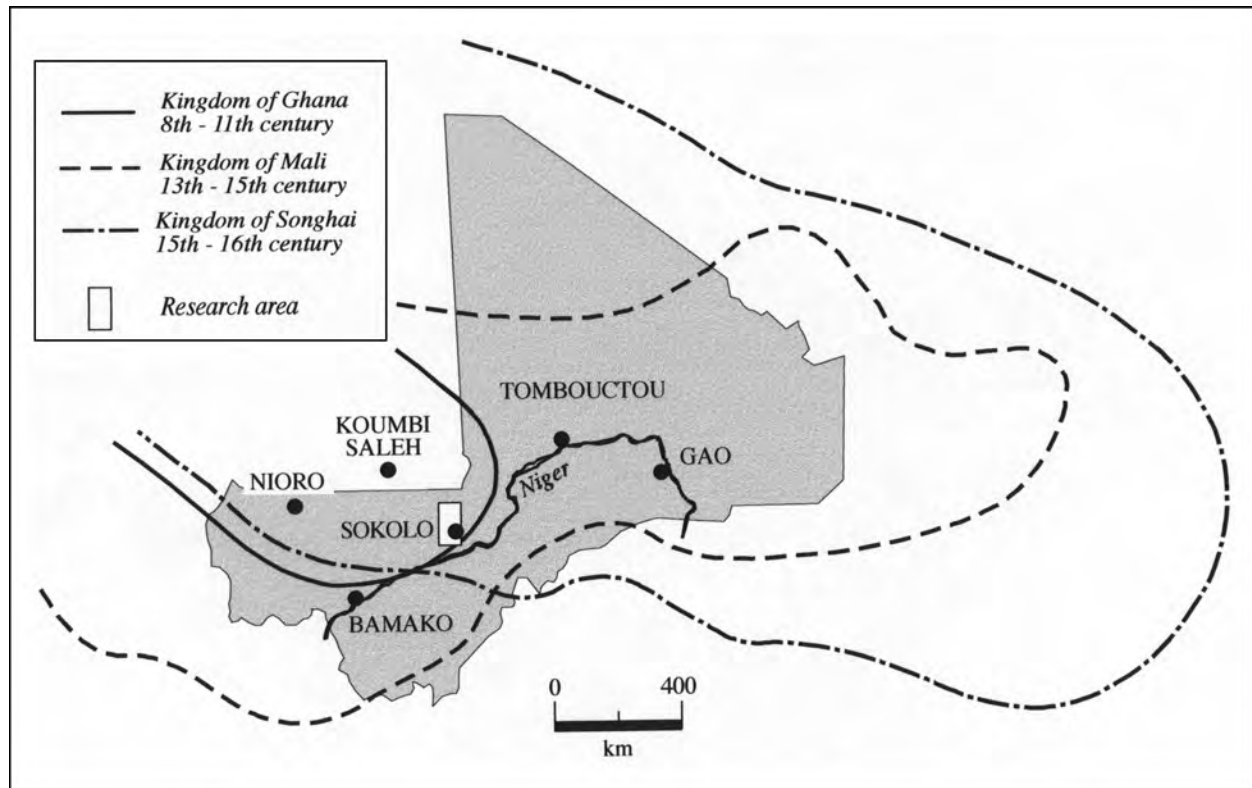


FIGURE 2. Ancient kingdoms in West Africa.

data since 1972. These data are used to document the progress of degraded areas as a main result of human activity.

History of the study area

Colonisation by humans can be proved since the Acheulian and their occurrence is strongly related to the ecological conditions and their changes. The sahelian ecosystem is characterised by relatively short successions of wet and dry episodes over the last 130000 years. The Holocene Optimum around 8500 to 6500 B.P., was followed by a drought period at 6700 B.P., lasting about 1000 years and was then replaced by a new humid episode of much lesser intensity. From 4500 B.P. on there was an abrupt decline in rainfall (Petit-Maire 1993). Since 5000 B.P. two different types of settlements—houses and frequently used camps—can be found along the Tichitt-Oualata ridge in southern Mauritania (Huysecom 1987). Since approx. 3000 B.P. the collection of plants was replaced by cultivation of millet. During the first millennium of our era a sufficient agricultural basis had been established to support such ancient kingdoms as Ghana—Mali and Songhay (Fig. 2). The kingdom Ghana, the first kingdom from which we know about in that area was situated in southern Mauritania. The capital—Koumbi Saleh—was located approx. 250 km north-west of our research region. It was estimated to have had between 15000 and 20000 inhabitants (Davidson 1965). The food supply with cereals came predominantly from the southern hinterland. During the subsequent kingdom “Mali” the region around our research area with the town Sokolo was also an important part of this large empire. Oualata an important city at one end of the west transsaharian trade route during the 8th to the 15th century was also supplied with grain from the southern regions. According to Devisse and Diallo (1993) was Sokolo an important

city on a trade route which combined the northern trade cities like Oualata with the big cities in the inner delta (Mopti, Djenne) and near the Niger river (Segou). During the 17th until the 19th centuries the research region was part of the more regional established Bambara (Segou/Kaarta) kingdoms (Krings 1982). At the end of the 19th century (1880) the traveller Oskar Lenz still reported from the area around Sokolo, that he passed large fields in alternation with park savannahs and that this was a region where hunger was unknown (Lenz 1892). The Segou empire was terminated by the French colonisation in 1890. Until the independence in 1962 of the state today called Mali the research region was part of the French Sudan. What happened during colonial time: In the 1920th of the last century the French began to install a huge plantation of cotton in the Canal du Sahel region. Their aim was to build up a cotton production as a counterpole against the British cotton industry in Egypt. The French had planned to construct a railway system through the Sahara desert until Algier to transport the cotton to France. Another part of this programme was the resettlement of 1 million people (Mossi from the area now called Burkina Faso) in this area. Fortunately this project was not completed in the way it was planned. Due to the decrease in rainfall during the second half of the sixties the cultivation was changed into plantation of rice (Office du Niger it is called today). Summing up: It therefore seems certain that the area we now call “Canal du Sahel” has been used for agriculture for more than 1000 years.

Climate development

Reicheit et al. (1992) described the climatological development during the past 1000 years as a trend from more humid conditions to and ones going from the 1000 A.C. in direction to the 19th century. Also NicholSEN (1981) demonstrates this trend since the 17th century with her results, based on fluvial and lacustric data bases. The 20th century was characterised by four droughts and one humid period. The first drought was recorded around 1910–1917, the second in the forties and this episode was replaced by a moist period in the fifties. The four wettest years of the record can be observed during the period 1947–1958. The wet period ended in the second half of the sixties. The precipitation decreases generally, two severe droughts occurred (in the first half of the seventies and the eighties)—the so called “Sahel droughts”. Since then we can observe a recovery in rainfall. But the recorded values have reached only 80–90% of the levels documented for the period 1931–1960. For the research region the recovery (period 1988–1998 in comparison to the period 1931–60) ties approx. by 75%. The last two years (1998, 1999) could be rated as moister ones, but the global trend seems to be that we cannot expect a real and lasting increase in precipitation—which, by the way, has never been observed in the past 4000 years. Fluctuation yes, but not a reversal of the aridification trend (climate aspect; Kusserow and Oestreich 1998). And in addition to that we have to take into account the effects of humans in the complex process of desertification.

Human impact

Aerial photos and satellite data demonstrate the human impact on a selected region in the west of Sokoto (13 km), near the village Famabougou. The aerial photo from February 1953 (in Kusserow 2000) still show a savannah type of a more diffuse pattern, a typical aspect we can also observe in other parts of the Sahelian zone from aerial photos dated in the early fifties (e.g., De Wispelaere 1990). The aerial photo from 1975 demonstrates a transformation into a more contracted pattern. This contracted pattern results from deforestation in

order to established fields and for firewood. The aerial photo documents that the formerly closed vegetation structure could not be rebuild. The establishment of crusted soils prevents a revegetation of the eroded areas (Hahn and Kusserow 1998). In the east (this is the direction to the rice fields of the Canal du Sahel area) this pattern is better developed than into direction west, indicating the increasing human pressure (deforestation) which is coming from the Canal du Sahel and is expanding into the savannah complex to the west. The SPOT satellite image from February 1992 (in Kusserow 2000) shows the final phase: the formerly dense vegetation cover is now converted into a pattern of isolated dots and strips. Also for a more regional analysis (1600 km) this conversion of the vegetation pattern induced by man under the aridification trend could be detected, using multitemporat and multiseasonal images from MSS and TM satellite data from 1972 until 1991 (Kusserow 1994; 1995). What does this mean for the local precipitation production ?

Over a surface covered with close vegetation (the typical Sahelian vegetation could be described as a continues herbaceous cover interspersed with sparse bushes and trees) the air is relatively warm and moist. However, the isolated dots and strips of woody vegetation are surrounded by extended areas of bare soils producing dry and hot air. The dew-point of this air parcel is lower, therefore it has to ascend higher to reach its condensation level. Consequently the cloud base is higher and possible precipitation might evaporate before reaching the earth's surface. Assuming the same atmospheric conditions, the precipitation production over an area characterised by non-continuous vegetation pattern can be expected to be much less than over a continuous vegetation.

Conclusion

For the region under study we can observe two major impacts: a climatic impact characterised by an increase in aridification, and the secondly and increasing important factor is humans and their cultural activity. Both influences form part of the complex process of desertification. The region we now call Sahel was once characterised as one reception area for the Saharan population migrating in all directions from the drying up Sahara. The Neolithic Sahara was one of the early cultural centres in the world, we can assume that the Saharan culture influences early stages of the big empires in the east (Egypt) and to the south (Ghana). But let us consider in more detail the term cultural activity. We have learned that the region under study was subjected to anthropomorphic influences over at least 1500 years (referring to the ancient kingdom of Ghana) not including the prehistoric influences we had to consider since the past 100000 years or more.

Cultural activity or civilisation is characterised by e.g.:

- settled communities
- accumulation of people (high population density, increasing birth rate)
- differentiation in the social structure of the society

But exactly these points which form the basics for building up a civilisation are also the starting points for its decline. The history of the colonisation of the Sahel region can, therefore, also be described as a decline in natural resources lasting for centuries. Since the mid-20th century we are in the final stages. "Final stage" means here low/very low soil fertility, dramatic decrease in the woody vegetation cover (decrease in number of species and total number), decrease in species number of herbaceous vegetation as well as species lost, increasing desertification, loss of habitats (genetic erosion) due to the conversion of secondary

vegetation and/or pasture land into agricultural areas in combination with decreasing rainfall and a huge increase in population growth (example the state Niger: beginning of the 20th century around 1 million inhabitants, 1950: 2.4 million and start of this century around 10 million inhabitants). So, could we focus the discussion on the question: Does civilisation create deserts?

Could we identify a civilisation in the past or today which was/is characterised by a settled way of life, accumulation of people etc., which did not disturb its environment? Or on the contrary should we assume that civilisation from a certain point (a point of no return) automatically leads to a destabilisation of the surrounding environment? Is the triumph of civilisation at the expense of the surrounding environment? The case study "Sahel" seems to confirm this thesis.

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Origin of Cattle Pastoralism in Africa—Chronological and Environmental Aspects

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The problem of the age and origin of nomadism is widely discussed in many scientific disciplines. Not long ago it seemed to be sure that animal domestication and this special kind of economic land use or of nature exploitation was firstly developed in Asia. But since several decades new facts and results point to quite a different view at least in respect to cattle pastoralism. The arguments that the origin of animal domestication and nomadic pastoralism based on cattle can be located in the central or eastern Sahara at a very early date (about 10,000 B.P.?) are summarized as follows. They are discussed in detail in a German written paper by the author, in print in the forthcoming journal, *Historia et Ars orientalis*.

1. Faunal relics of domesticated cattle from the eastern Sahara belong to the oldest ones in the world. Indeed, the determination of the quality “domesticated” being controversial. It is founded mainly on the fact that cattle is highly sensitive to ecological conditions. During the still semi-arid conditions in the eastern Sahara after the onset of the ‘Neolithic Wet Phase’ (10,000 B.P.) their need of daily drinking water could only be guaranteed by the help of man. Otherwise at least 350–400 mm of annual precipitation in the Western Desert of Egypt would be necessary, an amount which is beyond the assessments of most scientists for this time and area.
2. Neolithic cattle pastoralism in northern Africa/Sahara is documented by a great number of various rock art. Their age is in dispute, the longest record being presumed from about 10,000 B.P., but it is only from about 7,500 B.P. in common agreement. Rock art of the bovine period is found only in mountains though cattle is not a mountain animal like sheep or goats. It prefers open grassland and lowland where on the other hand rocky walls are missing. Sometimes the numerous rock pictures show big herds: cattle pastoralism must have been a widely distributed essential for economic survival and it must have been practised for a long time. So it seems unlikely that the only traces left is rock art.
3. Abundant neolithic fireplaces (‘Steinplätze’) are widely distributed all over the Sahara. They are interpreted as being the camp-fires of the nomadic cattle herders. They grant a chronological and spatial analysis though their cultural relations still rest problematic. Radiocarbon ages range from about 10,000 B.P. to 3,800 B.P. showing a clear maximum between 5,800 and 5,000 B.P. Desiccation afterwards forced the people to retreat to favourable areas like the Nile Valley or the Sahelian zone and East Africa.
4. Today, nomadic cattle pastoralism is restricted to the African continent. There are no historic or prehistoric predecessors elsewhere known. The remaining Old World

nomadic pastoralism is based mostly on other species of domestic animals. Nevertheless, early domestic cattle is known from the Near East and from southern Europe, too.

5. The African continent exhibits a chronological incline of cattle pastoralism from north to south, arriving in southern Africa not previous to 2,000 B.P. So a northern origin seems obvious, but the tropical rain forests are naturally excluded for ecological reasons.
6. During the millennia in question the Sahara proved to be a savanna-like landscape with good ecological conditions for the development of such an economic strategy of land utilization and of exploitation of natural resources.
7. Other arguments are from linguistic as well as from modern genetic research which indicate a very early autochthonous process of cattle domestication in northern Africa. So, for example, it is presumed that several terms for cattle husbandry, milk or dairy products are older than 10,000 B.P.

Though the evidences for Saharan origin of cattle pastoralism seem to be most convincing there are still many problems to be resolved. As a great mystery remains the initial area from where cattle and man penetrated the Sahara after the hyperarid period of the end-Pleistocene. Some think of the African savanna zones, others of the Nile Valley or even still of the Near East, but it is argued here that most probably it was the central Saharan mountain areas, especially the Tibesti, which because of their various climatic and geomorphic conditions granted a lot of ecological niches and the best chance of survival during warm and dry phases. From here animals and men must have populated the great plains providing vegetation cover, lakes or water courses, but no rocks to be painted on.

The southern fringe of the Sahara was presumably inconvenient for cattle herding because of tsetse, and the northern fringe seems to have been too dry. So the multiresource' nomadic pastoralists roamed about the enormous lowlands of the central Sahara from east to west, while in the central mountains and in the south people progressed to a more sedentary life with abundant production of pottery. Most likely there was no transhumance between both areas; people mixed their contrasting way of life only occasionally or when the plains lost their economic value at the end of the 'Neolithic Wet Phase.'

Another problem is the initial motive, the triggering factor and the course of the domestication process and the development of such a nomadic way of life. At that early time neither demographic reasons (overpopulation) nor political pressures can have forced the people to look for their livelihood in marginal areas. Cattle pastoralism must have been an optimal choice in that situation. It surely did not evolve from agriculture as former generations of scientists believed, but we do not know whether and what kind of alternatives the early neolithicians really had.

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SECTION II

Images of Gods and Humans

Gods and Humans in Mesopotamian Art: A Communication System through Visual Expression

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The basic aim of modern critical thought about the art of the historical civilizations of the ancient Near East is, on the one hand, to understand the specific system of values, not only the aesthetics of each artistic culture, and, on the other hand, to put the development in time of those figurative expressions in a historical context. This aim, which, in very general and simplifying terms, is peculiar to the discipline usually called history of art, in the sphere of the human sciences of the Western world, is by no means easy to pursue.

In fact, as regards the first point, it is usually believed that the objective may be reached through the assimilation of artistic manifestations, for instance expressions of the ancient Mesopotamian culture, with expressions of one phase, an archaic one of course, of the history of art of Greece. This is the same pseudo-critical procedure which, in a totally wrong way, leads to the belief that some political, social, and economic institutions of ancient Mesopotamia are understood when they are described, and interpreted, in turn, as “Proto-Sumerian democracy”, “Old Babylonian middle class”, “Neo-Sumerian university”, “Late Babylonian banking system”. According to this interpretative perspective, which is completely uncritical, and anti-historical, peculiar characters of modern institutions are attributed to institutions quite distant from us in time, and space: the result is systematic misunderstanding, instead of comprehension. In more general terms, according to this formulation, instead of appreciation of the diversity and peculiarities of ancient institutions, one finds their banalization, through the undue assimilation with modern ones, with which, of course, they have only very superficial and deceptive analogies.

As regards the second point, the identification of the changes, which took place during the historical development of the artistic expression in the Mesopotamian world itself, is made difficult by a firm belief rooted in the Western way of thinking. So to say, in the interpretation of the ancient world, the place of history, in the sense of change, development, and progress, is the Greek and Roman world: on the contrary, the Pre-Classical world is the place of stagnation and immobility. In other words, for a widespread and certainly prevailing perception, typical of the modern Western world, the Pre-Classical civilizations of the Mediterranean are a kind of time of lack of change, of Dark Age, of structural prehistory, preceding the time of changes, the age of true history. According to this perspective, the judgement of Pre-Classical civilizations in the Mediterranean is basically a negative one, with the exception of the presumed fore-bearers of the values of the Classical world.¹ Only

1. Cfr. as an example Curtius 1959.

to give some examples, the Old Akkadian naturalism² or the historical art of the Neo-Assyrian empire,³ rather than expressions of typical and specific values, have meaning and value because they are perceived as forerunners, albeit peculiar and episodic, of taste and style trends, and of forms of the artistic expression typical of the Greek and Roman world.

Moreover, in the modern critical considerations of the artistic works of the historical civilizations of the ancient Near East, there is a major difficulty, because in the widespread and prevailing perception of modern Western culture, the persistent prejudice remains that the strongest values of artistic works are not to be found in ancient civilizations before the Greek plastic productions. This descends basically from the places and times of the origin itself, and of the most important development, of art criticism.⁴ In fact, art criticism started historically only in the Hellenistic age⁵ and exercised itself precisely on the works of that figurative culture and of that time. Moreover, in all its most meaningful developments, particularly at the beginning of the XVIth century Italian Renaissance, until the Neo-Classical age of the XIXth, the Western art criticism was practised only with works of Western art.⁶

This unquestionable historical situation of art criticism brought at least two major consequences. The first one is that the critical instruments of modern Western history of art were, so to say, conceived as a function of Western works of art, first of the ancient Greek and Roman world, and later, and most of all, of the Renaissance world, even if to-day we consider them to have a universal validity. We believe that they can be applied to any figurative culture, in any time, in any place, for any civilization. The second consequence is that, precisely because these judgements were produced in relation to the society of these ancient and modern worlds, the hierarchy of artistic genres, quite familiar for Western history of art, is functional only for those same worlds and is totally foreign to other artistic cultures.⁷ So, to give two examples only, Chinese paintings or Indian Moghul miniatures, for their peculiar formal values and for their nature of minor arts, are not considered in the general critical judgement as works of art on a very high level, as they rather should.

Now, in our opinion, there are neither privileged nor sure critical paths, but two apparently opposite, but in reality complementary, routes must be followed, in order that the artistic works of the ancient Near Eastern civilizations might assume real values and meanings, on the level of their full historical placement, and not only on the accessory and subordinate levels of the documentation of political history or of material culture. On the one hand, notwithstanding the reservations mentioned before, one cannot renounce the evaluation of the properly formal characteristics of the works, according to methods of criticism and of history of art, as they are usually applied to the accomplishments of the ancient and modern Western world. On the other hand, one cannot renounce—particularly by means of the exhaustive and philologically correct use of the literary sources contemporary with the works—the reconstruction of the social contexts, of the clients' programs, of the aims of projects, of ideological messages. In order to obtain acceptable historical reconstructions of

2. Critical contributions to the construction of a history of the art of the Agade dynasty are Winter 1985; Foster 1985; Nigro 1992, 1998 and Nigro In press.

3. A historical evaluation of the Neo-Assyrian art is presented now in Matthiae 1996a.

4. Venturi 1974.

5. Overbeck 1959; Becatti 1951; Pollitt 1983 and 1974.

6. A classical treatment of the history of the aesthetic ideas and terminologies is Tatarkiewicz 1979.

7. Bologna 1972.

the artistic productions of the great Pre-Classical civilizations, the two critical operations must be done together.⁸

The accomplishments of the architectural, and artistic masterpieces of Mesopotamian civilization correspond to a precise logic, which makes sense only within the picture of the general idea of the world of that civilization. In the following considerations, I wish to summarize, in short, this picture and how the production of architectural and artistic works is, in the relation between divine and human worlds, a true organic system of communication, with its specific central function, not in terms of aesthetic values, but of structural organization of society.

In the Mesopotamian concept of the world, the natural world as well as the cultural world is the results of divine creation.⁹ Wild and domestic nature, accomplished or unaccomplished humankind, civil and social institutions, handicraft tools and human works, without distinction, have their origin in the times of myth:¹⁰ their existence descends from unanimous divine will, accomplished by a creating god. At the time of creation the fate of each thing was established, in nature as well as in society. To each product of creation one placement, one function, one rule was attributed, so that in creation a sure and perfect order is inherent.¹¹

Universe in its whole is structured according to an unchanging divine order, which is its foundation, but to which, in historical times, attempts can be made by the forces of chaos, as happened in the times of myth, when Ninurta had to contrast to and triumph over the Asakku and Anzu,¹² or when Marduk knocked down Ti'amat.¹³ The only true guarantee that cosmic order is kept intact is the conservation and integrity of the gods' sanctuaries, which are the primigenial residences created by the gods themselves in places they had chosen. It is also essential that the gods are physically present in their houses, because when they leave their towns and their temples, temple and town—therefore the social community in its wholeness—are destined to certain ruin, until the gods come back, as is clear from the Lamentations over Ur and Sumer at the end of the IIIrd dynasty of Ur.¹⁴

Kingship is the basic institution of mediation between the divine and human worlds, in order that, in historical times, the aggression of the forces of chaos do not upset cosmic order, and that the damages they produce may be limited in space and time.¹⁵ As is patent from the Sumerian King List, the holder of kingship, an institution created at the same time as the first town, where kingship was sent from heaven, at the beginning of times, is the responsible on earth for social order, and for natural order.¹⁶ The king, beloved by the gods,

8. The four volumes history of art of the ancient Near East actually prepared by the author has been conceived according to this double perspective: Matthiae 1996b, 1997, and 2000.

9. Frankfort 1948.

10. Castellino 1959: 25–32; Oberhuber 1963: 3–16; van Dijk 1967: 229–44; Farber-Flügge 1973.

11. This conception is particularly clear in the Sumerian myth called “Enki and the World Order” (Bottéro and Kramer 1989: 165–188).

12. van Dijk 1983; Bottéro and Kramer 1989: 338–429.

13. Lambert and Millard 1969; Bottéro and Kramer 1989: 526–66, 602–79.

14. Michalowski 1989, but see also Green 1984: 253–79 and Kramer 1991: 1–26. A nice translation of the “Lamentation over Ur” may be found in Jacobsen 1987: 458–63.

15. Labat 1939; Gadd 1948; Frankfort 1948; The idea that a conception of history and kingship was without changes in Mesopotamia during the millennia, proposed by Speiser (Speiser 1955: 35–76) has been convincingly articulated by Grayson (Grayson 1980: 140–94). On a very interesting reconstruction of the historical origin of the institution of kingship in the milieu of the Early Dynastic cities and traditions see now Heimpel 1992: 4–21.

filled of virtues by them, guarantees for justice, and triumph over enemies, but, at the same time, he controls nature, domesticated by agriculture, keeping the canals in order, as the Old Babylonian kings did, and invades wild nature, entering inaccessible regions, and killing untameable wild animals as the Neo-Assyrian kings did.¹⁷

Basically the king is the keeper of celestial order on earth, but he cannot perform his function if he does not communicate constantly with the divine world, because every initiative of his must have the guarantee that it has divine approval and does not depend on human abuse. This communication is carried out through personal channels of two kinds: on the one hand, visions and dreams, namely personal means which were activated even without a request by the king, as often happens with the Neo-Babylonian sovereigns,¹⁸ and, on the other hand, divinatory practices, public means in which the king takes over the initiative to question the gods, as usually happens with the Neo-Assyrian kings.¹⁹

The social and natural order, which in historical times the sovereign ensures in a unitary and harmonic way, is only the order created by the gods in the times of myth. Accomplishing to this basic role, the king must preserve and renovate faithfully the divine work, in full compliance with divine will, and according to divine dictates. Exalted intellectual capacities and peerless technical knowledge are bestowed to the king, who has unparalleled wisdom and understanding: in fact, he is, for his sagacity and competence, even before any other talent which one god or other may give him, the image on earth of Enki/Ea, the creating god of Eridu, the main author of the creation of universe, and the inexhaustible counselor imbued with incomparable sagacity.²⁰

For his nature, which is a human one, but also an extremely privileged one, the king, at first conceives plans thanks to divine inspiration, secondly verifies with gods their practicality, and, thirdly, takes care that they are accomplished according to the ways and times approved by the divine world.²¹ Among the initiatives the king has to assume, the preservation and therefore the reconstruction, or refurbishing, of the gods' residences and, of course, have a central place. But this kind of building activity, so frequently recalled in royal inscriptions, must be accomplished with the certainty that the places for the sacred edifice is the one originally chosen by the god, that the plan is convenient for the gods' needs, and that the times of fulfilment are approved by the god.

Even in this kind of royal activity, which—we might expect—should have the gods' benevolent and grateful approval, it was not possible to have the certainty of divine favour. A famous case of strong divine disapproval of a king's project of this kind concerns the reconstruction of Enlil's great temple Ekur at Nippur, which Naram-Sin of Agade had decided, and which did not receive Enlil's approval.²² According to the famous poetic composition

16. Jacobsen 1939; Van Seters 1983: 68–76; Wilcke 1989: 557–71; Michalowski 1984: 237–48.

17. Liverani 1979: 297–317; Garelli 1987: 513–24.

18. Oppenheim 1956: 179–373. Typical is the case of the construction of Etemenanki, Babylon Tower, started by Nabopolassar and completed by Nebuchadnezzar II: Langdon 1912: 60–63, 90–91, 114–15, 126–27, 148–49. On the architectural initiatives of Nebuchadnezzar see Matthiae 1996: 351–60.

19. von Soden 1954: 118–26; Aro 1966: 109–17; Oppenheim 1969: 97–135; Cogan 1983: 76–87; A peculiar typology of texts of great interest is that studied by Starr (Starr 1990).

20. For the fundamental figure of Enki/Ea in connection with the creation and the organization of the world, see, in an original and peculiar historical reconstruction, Jacobsen 1976: 110–18 and, for a structural reconstruction emerging from the myth, Kramer and Maier 1989.

21. Matthiae 1994: 127–62.

22. Cooper 1983.

“The Curse of Agade”, from this contrast descended the collapse of the Agade dynasty and the end of its empire, provoked by the fact that Ishtar of Agade abandoned the town.²³

The care for sanctuaries, within the sphere of architecture, is the king’s first, central, basic function, which is accomplished by repeating and renewing Enki/Ea’s most peculiar and important role, later on attributed to Marduk in Babylonia,²⁴ and possibly to Ashur in Assyria. But the king has not lesser responsibilities within the artistic sphere, particularly in two sectors of figurative expression. On the one hand, the production and restoration of divine statues, which are the cult images of the temples, and, on the other hand, the production of the royal statues, which are the votive images in the temples. The first kind of statue ensures the god’s presence inside the social community; the second kind the communication between king and gods.²⁵

As has already been hinted at, the divine statues, when they leave their temple and their town, decree the catastrophe for their faithful community. The removal of Marduk’s and Sarpanitum’s images from the Esagil of Babylon by Mursili I, at the beginning of the XVIth century B.C., by Tukulti-Ninurta I in the XIIIth century B.C. and, lastly, by Sennacherib in 689 B.C. brought to the temporary abandonment and to the political collapse of Babylon.²⁶ The only possible remedy to this desperate situation was the restitution of the statues to their original locations, to their houses, and, at the same time, their restoration. A punctual memory of these initiatives is kept, in fact, in documents of different nature and reliability, for the Cassite king Agumkakrime, for the great Nebuchadnezzar I,²⁷ and for Asarhaddon of Assyria, who apparently definitely changed his father Sennacherib’s politics towards Babylon.²⁸

The royal statues and votive steles have a very peculiar and characteristic function for the mentality of the Mesopotamian world, as well as for its society, as regards the communication between divine and human worlds. It is quite evident that statues and votive steles had the same function, at least since the Old Akkadian to the end of the Old Babylonian periods, because in Sumerian (DUL, ALAM), and in Akkadian (salmu) there is one word only for both kinds of works, which is quite embarrassing, when one wishes to reconstruct one monument only on the base of written evidences:²⁹ evidently this word indicates the social, ideological, and religious function of the monument, more than its material and technical typology.

Royal statues and steles, in fact, “speak” to the divine world, and have the specific function, to illustrate the king’s initiatives and deeds. More specifically, and more precisely, in

23. Glassner 1986.

24. Lambert 1964: 3–13.

25. The frequent introduction of votive statues in Mesopotamian temples since the Early Dynastic periods made the sanctuaries places where was kept a fundamental visual memory of ancient history and of ancient artistic traditions: Cooper 1990: 109–16.

26. The famous text of Agumkakrime has been recently translated by Foster (Foster 1993: 273–77).

27. The text called the “Profecy of Marduk”, probably composed in the Middle Babylonian period, remembers the strange trips of Marduk far from Babylon, Borger 1971: cols. 3–24; a new translation may be found in Foster 1993: 304–7.

28. On the problem of Asarhaddon’s politics concerning Babylon see now Porter 1993.

29. In some cases the mention of the material of the monument is an important element for the identification of the type of monument, as in Naram-Sin’s inscription remembering the “golden monument”, clearly a statue: Gelb and Kienast 1990: 266–67 (n. C7). Some important evaluations about the reconstruction of a votive statue of Naram-Sin’s on the base of the original inscriptions may be found in Buccellati 1993: 58–71.

the first place, they present to the gods what the king is planning and accomplishing. In the second place, they are witnesses for the divine approval for the king's work, just with their accepted presence in sanctuaries. In the third place, they ensure the prolongation of the positive effects of those acts in the future. In the fourth place, they guarantee the favour by the gods and prosperity to the king, to his dynasty, and to his people.³⁰

The core of the mental attitude of the Old Babylonian world, with regard to the dedication of royal statues and votive steles in temples is represented with great evidence by the little known text of a silver statue of his father Nur-Adad, dedicated by Sin-iddinam, a king of Larsa, around 1845 B.C., and placed in the court of Ebabbar, Shamash's famous sanctuary at Larsa. The text, carved in a copy actually in the Berlin Museum, is conceived as a letter of Sin-iddinam's to the god Shamash, where he recalls his father's deeds.³¹ The latter had restored the gods' cult and had freed the country from a serious insurrection, to which Ilushuma of Ashur was perhaps not extraneous.

In the second part of the inscription, Sin-iddinam speaks directly with his father's statue and asks it, first, to stay where it had been placed and, second, to speak continuously with the god, in order to illustrate and remember him his merits. The consequence of the positive acts made by his father and recalled to the god will be the grant of eternal life to the son actually reigning. The king speaks with his father's statue like a living creature and urges it to speak continuously with the god, with whom, therefore, it must have a constant relation.³²

Now, coherently with the Mesopotamian concept of the king who has to take care of the conservation and renovation of the natural and cultural order created by the gods in the time of myth, the occasions for the dedication of royal statues and steles in the temples are the king's accomplishments in the social, natural, architectural, juridical, and military spheres. Taking into consideration only the most famous among the very few steles we still have of the Neo-Sumerian and Old Babylonian periods, Ur-Nammu's stele from Ur, for instance, was erected in order to present to Nanna and Ningal the king's accomplishments concerning the excavation of important canals and perhaps the famous constructions the founder of the IIIrd dynasty of Ur started in Nanna's sanctuary.³³

Hammurabi of Babylon's stele is one of the three steles which were usually dedicated when an Old Babylonian king published a collection of judicial cases, which should have a normative value as reference, and which we now improperly call "codex". In such occasions, a first stele was dedicated in the town god's temple—in this instance certainly Marduk's Es-agil—and the monument dedicated by Hammurabi is completely lost. A second stele was dedicated by Hammurabi in the main temple of the country, namely Enlil's Ekur at Nippur, and a small fragment of this monument has been preserved.³⁴ The third stele was dedicated in the main sanctuary of Shamash, the god of justice, at Sippar, and, as is well known, this

30. A detailed analysis about this conception is presented by Matthiae 1994: 39–83.

31. van Dijk 1965: 1–25. The type of the letter "sent" to god Shamash had a long tradition, Hallo 1982: 95–109.

32. About this function of the statues in front of the gods see Hallo 1962: 13–14, 16–17 and Falkenstein 1966: 177.

33. Börker-Klähn 1982: 39–44. The impressive analogies between the strongly fragmentary Gudea's steles and Ur-Nammu's stele may be understood also on the base of possible use of the same workshops by the two kings, as their date has been recently reassessed, Steinkeller 1988: 47–53.

34. The presence of a Hammurabi's stele in Enlil's sanctuary at Nippur is made certain by the finding of a fragment of a Cassite copy of the codex in the town of Enlil: Finkelstein 1969: 11–27.

monument was found in an excellent state of preservation, although it was brought away to Susa, after the Elamites' sack in the XIIth century B.C.³⁵

An unfortunately very fragmentary stele, less known than the previous ones, was found in the region of Mardin and had probably been erected by Shamshi-Addu I of Assyria, the great sovereign contemporary with Hammurabi of Babylon. This is an example a few years older of a stele with war deeds, instead of buildings or justice acts.³⁶

Therefore, it is quite evident from these few examples that the stele placed in the temples of the Old Babylonian world had the function to present to the gods the sovereign's accomplishments concerning, as has been said, the architectural and natural spheres—the so-called building stele for temples and canals-, the social and juridical sphere—the so-called codex stele for the collection of laws-, and, lastly, the military sphere—the so-called victory stele. It is quite important to point out that, in the Mesopotamian way of thinking, all these deeds of the kings', which are so different for us, can be reduced to a basic unity: through them the king triumphed over chaos and, in different ways, he restored in historical times the order gods had established in the times of myth.³⁷

The function of royal votive images—statues and steles—in the Mesopotamian world is a basic one, because it ensures the direct relation between the king and the divine world. But this function was not limited, as it may appear, to the ideological and religious spheres, because it ensured, in a very subtle and delicate way, the indirect communication between the sovereign and his subjects, which, of course, was not less basic. In fact, the messages which were physically carried by the statues and steles by means of the image and of the inscriptions, were directed in reality to two different, and somehow opposed categories of interlocutors.

Primarily, they attested in front of the divine world that the king's initiatives in the social sphere, in the military ambit, in the natural world, were correct, that they were legitimate deeds, because they had been inspired, and requested by the gods.³⁸ At the same moment in which these accomplishments are presented in details to the gods, their authenticity and completeness are guaranteed as well, since it is impossible to lie to the gods: if a lie were told, the god would not accept the presentation of deeds and would refuse it.³⁹ The

35. Also in the case of the "Laws of Ur-Nammu", the copies we have have been found at Nippur, at Sippar, and at Ur, showing that the original texts were clearly steles erected in the sanctuaries of Enlil, of Shamash and of Nanna: Finkelstein 1968–69: 66–82. The authorship of these steles could be probably by Shulgi: Yildiz and van Dijk 1981: 87–97; Steinkeller 1987: 19–21. Another law code recently published, that could be a part of the epilogue of Ur-Nammu text or of an until now unknown code published perhaps by Ishme-Dagan of Isin, was prepared at Sippar: Michalowski and Walker 1989: 383–96.

36. Moortgat 1967: 109, pls. 204–5. The remains of the texts inscribed on the stele celebrate the conquest of Arrapkha: for this reason the monument has been attributed by some scholars to Naram-Sin of Eshnunna and by others to Dadusha of Eshnunna, but recently some historical and philological considerations impose to finally attribute the stele to Shamshi-Addu I: Charpin and Durand 1985: 314–15.

37. The general and basic social function, not only in the sphere of the juridical ambit, of the so-called codex steles is clear from the expressions employed in the famous epilogue of Hammurabi's stele: Finet 1983: 136–37.

38. This is the reason of the very punctual descriptions of the military deeds of the kings of Agade preserved in the Old Babylonian copies of the original inscriptions carved on the steles erected, mainly at Nippur and at Ur: Gelb and Kienast 1990. For Naram-Sin of Agade another copy, apparently composed on the base of several original stele inscriptions, has been recently published by Foster (Foster 1990: 25–44).

fulfilment of divine will is made certain, in Mesopotamian way of thinking, by the same fact that gods accepted their presentation through the stele, or the statue. The gods' gratefulness for the king's accomplishments is made recognizable, and perceptible for humans, thanks to the grant of prosperity, the length of reign, and the perpetuation of the dynasty.⁴⁰

On the other hand, in the second place, the royal statues and steles, with their presence in temples, which is felt as a ratification by the gods of the king's works, reveal to the humans' public the legitimacy and correctness of the king's behaviours. In other words, according to this mentality, the dedication of kings' carved images in relation with the accomplishments of specific initiatives of the king's, is an indispensable complement of those same initiatives.⁴¹ Their well accepted presence in the gods' temples is, for the human community of the subjects, the necessary and evident proof of divine inspiration and approval. Only for the presence inside temples of the artistic works illustrating those deeds the subjects can be sure of their present, and future, efficacy.⁴²

In conclusion, what the king conceives, plans and accomplishes, acting in analogy with Enki/Ea, the great divine maker, in the sphere of architectural and artistic productions, has, according to Mesopotamian way of thinking, a precise ideological placement of its own, and so to say, another, secondary, social aspect, which looks at the human world of the subjects, besides the basic one, which looks only at the divine world. The architectural and artistic accomplishments have, therefore, in the same system of the Mesopotamian thought, a special central position: this position must be interpreted within the picture of the basic relation between divine world and human world, and in consideration of the king's figure, with his relevant mediating role. On both aspects Mesopotamian civilization is founded, with its specific peculiarity.

39. Very detailed descriptions appear sometime in the stele inscriptions, as is the case of a famous stele dedicated in Nanna's temple of Ur by Naram-Sin of Agade, where the fortifications of Armanum in Syria are illustrated. This text originated several hypotheses of reconstruction: Kraus 1948: 81–92; Foster 1982: 27–36.
40. A preliminary study of the texts containing information about the votive statues of Old Babylonian period is by M.-Th. Barrelet, «La "figure du roi" dans l'iconographie et dans les texts depuis Ur-Nanshe jusqu'à la fin de la Ière dynastie de Babylone», in P. Garelli (ed.), *Le Palais et la Royauté (Archéologie et Civilisation)*, XIXe Rencontre Assyriologique Internationale, Paris, 29 juin–2 juillet 1971, Geuthner, Paris 1974, p. 27–138.
41. The evidence furnished by the "year names" of Isin, Larsa and Babylon I lists on the king's statues dedicated in the temples is of extraordinary importance also concerning the possibility to reconstruct lost statuary typologies, in consequence of the difference between metal and stone votive images: M. Sigrist, *Isin Year Names (Institute of Archaeology publications. Assyriological Series, 2)*, Andrews University, Berrien Springs 1988, p. 24, 27, 33–35; Id., *Larsa Year Names (Institute of Archaeology. Assyriological Series, 3)*, Andrews University, Berrien Springs 1990, p. 7–10, 12–13, 15, 22. In some occasions, many votive statues of the king were erected in temples: M. W. Green, D. Frayne, «Sîn-iqisham and the Fourteen Statues for Nipur», in *Annual Review of the Royal Inscriptions of Mesopotamia Project 6* (1988), p. 25–32.
42. On the very peculiar types of the statues erected by the later kings of the Ist dynasty of Babylon see Matthiae, *Il sovrano e l'opera*, cit., p. 51–60. Already during the Ur III dynasty it is possible that there were dedicated statues of kings in unusual attitude according perhaps some particular cultic deeds of the sovereigns: D. Frayne, «Shulgi the Runner», in *Journal of the American Oriental Society* 103 (1983), p. 739–48; J. Klein, «Shulgi and Ishmedagan: Runners in the Service of the Gods (SRT 13)», in *Beer Sheva* 2 (1985), p. 7*–38*.

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Images of Mesopotamian Gods and Kings: Light, Radiance, and the Limits of Visual Representation

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Abstract

The quality of “light” or “shine” is attributed in text to most gods, as well as temples, palaces and sacred artifacts; yet is absent in imagery on seals or reliefs without the use of color or specific radiating patterns. In addition, a heightened effect of light as intense radiance is conveyed textually by a variety of terms, most important of which is the paramount quality attributed to deities, rulers, and powerful objects or works: Sumerian *me.la m₂*, Akkadian *melammû*—a luminous aura surrounding the designated figure. In later representational strategies, such as Roman, Buddhist or Christian art, such divine splendor is often indicated visually as a halo or nimbus. For Mesopotamia, apart from the rays that often emanate from the shoulders of the moon or sun god, no such conventions for light or radiance are apparent, their textual importance notwithstanding. It is argued that such textually-ascribed attributes should not be left out of the descriptive schema for conceptualizing imagery, even if strategies have not yet been developed to represent them visually.

To have a general section devoted to imagery within an Archaeology Congress is particularly satisfying to the archaeologically-trained art historian, because it accords value to the post-excavation analytical process appropriate to material culture—beyond the quantifiable or the chronological, toward cultural meaning. It also signals the cultural import of “representation” what it does in and for a given historical moment.

Early studies of Mesopotamian representation, such as Henri Frankfort’s *Cylinder Seals*, were more iconographical than iconological, seeking criteria by which certain figures, largely deities, could be identified: the goddess Inanna/Ishtar, with her battle garb and maces; the sun-god Utu/Shamash, with rays issuing forth from his shoulders (Frankfort 1939: 95ff and our Fig. 1). Occasionally those studies pressed beyond the data to discover literary figures, like Gilgamesh, where we now see just an eponymous hero; or Etana in the male figure on a bird’s back (Fig. 2), because we had the fortuitous parallel of a narrative text that seemed to match (Frankfort 1939: 137–141). More recently, it has been important to refine our criteria for recognition, as with recent studies of the moon-god, Nanna/Su’en (e.g., Collon 1992; Braun-Holzinger 1993; Colbow 1997); to be more inclusive in studies of symbol and iconography (Green 1995); and also to recognize, with Piotr Steinkeller (1992), that there may have been mythological narratives *not* preserved, lying behind some of these images.

The very mention of narrative brings up a problem in any inquiry into visual meaning in Mesopotamia: namely, that, as with Etana, the textual underlies all attempts to identify



FIGURE 1. Seal impression: Shammash rising, Late Akkadian Period; provenance unknown. Pierpont Morgan Library, New York: #254.



FIGURE 2. Seal impression: Etana myth? Courtyard scene with man on bird's back, Akkadian period; provenance unknown. Staatliche Museen, Berlin: VA 3456.

motif with myth. This can prove fruitful, although it can also be distorting, due to the possibility of unattested texts or references. But there is a second, more post-modern kind of problem, grounded in the recognition that the “text” itself is not a given. Instead, texts, too, constitute a category of “representation” in which narrative and description are selectively combined toward a communicative end, and so, not without their own share of “imagery” that needs to be deciphered and mentally visualized!

It is this intertwining of the verbal and the visual, and the *representational strategies* that must underlie both, that I would like to address here: specifically, what is found in the textual record that is not present in the visual/artifactual record. At meetings primarily philological, pleas have been made that the visual images not be viewed as merely an easy field for browsing, toward a mechanistic pairing of textual referent with illustration thereof (e.g., Winter 1997). However, in a venue of archaeologists and scholars committed to material culture, a different sort of plea emerges: that, conversely, with all the fieldwork and training required to manage the material remains, linguistic systems of representation not be forgotten when dealing with the monuments.

Unlike some traditions known only from archaeological data, those of us who work on Mesopotamia are fortunate in that we *do* have a textual corpus with which to compare and augment the material finds. When one puts together both the verbal and the visual as distinct, if interlocking, representational strategies, then it becomes apparent that the way the two work together at any given cultural or historical moment adds essential perspective for our inquiry into the past.

With such problems in mind, I would like to concentrate on the property of emanating light or radiance, which constitutes one of the most positive attributes in textual descriptions of Mesopotamian gods, rulers and works, but for which the visual means of signaling was less than fully developed (Winter 1994 and 1995). These texts, in both Sumerian and Akkadian, make apparent that all aspects of light were important. It is physically manifest in the gleam of precious metals and stones, as, for example, the silver cult vase of Enmetena from Tello (Fig. 3), and conceptualized in the rays that issue from the shoulders of the sun-god, as noted above depicted on seals and on the Law stele of Hammurabi (e.g., Figs. 1 and 4). The quality may then be extended to a metaphoric shine that is said to emanate from all that is good, beautiful, and sacred. In all cases, it is the combination of light-plus-sheen yielding a kind of lustrousness that is seen as particularly positive and auspicious.

Temples, for example, are consistently said to shine like heavenly bodies. Despite the limitations of the archaeological record, where often all we have preserved is wall stubs and



FIGURE 3. Silver vase of Enmetena of Lagash, found Tello, Early Dynastic III Period. Louvre, Paris: AO 2674.



FIGURE 4. Law stele of Hammurabi, diorite, found Susa, Old Babylonian Period. Louvre, Paris: Sb 8.

floor-plans (Figs. 5 and 6), it is important to be able to mentally invest those temples with the experiential properties described in text. The temple to the god Ningirsu built by Gudea, for example, of which all that remains at Tello are a few scraps of foundation wall below a 2nd century palace (Parrot 1948: Fig. 33b), was said to have been adorned with “the brightness of heaven” (*_e-e-r-z-i-a-n-na-ka*; Edzard 1997: 86, Cylinder A, col. xxvii, 10). In later periods, celestial brightness seems to have been attributed to virtually all temples. Neo-Assyrian and Neo-Babylonian kings refer constantly to temples as “brilliant,” or “shining” (*namru*), as they beam out over the city—often from a height, as the raised ziggurats, or temple platforms would have permitted.

For some temples, white paint or plaster—brilliant as it catches the sunlight—was a likely means by which this shining effect could be achieved (as, for example, the White Temple of Warka, our Figs. 5 and 6). Occasionally, areas were embellished with other materials—glazed brick or metal, such as the copper panel from the Ninhursag temple at al-Ubaid of the Early Dynastic Period (Fig. 7)—thereby adding to the shine; however for temples of the Assyrian period, the effect was said to have been achieved by literally covering the sanctuary walls with precious metal. Esarhaddon, for example, tells us that he overlaid temple walls in Assyria and Babylonia with silver and gold, making them “shine

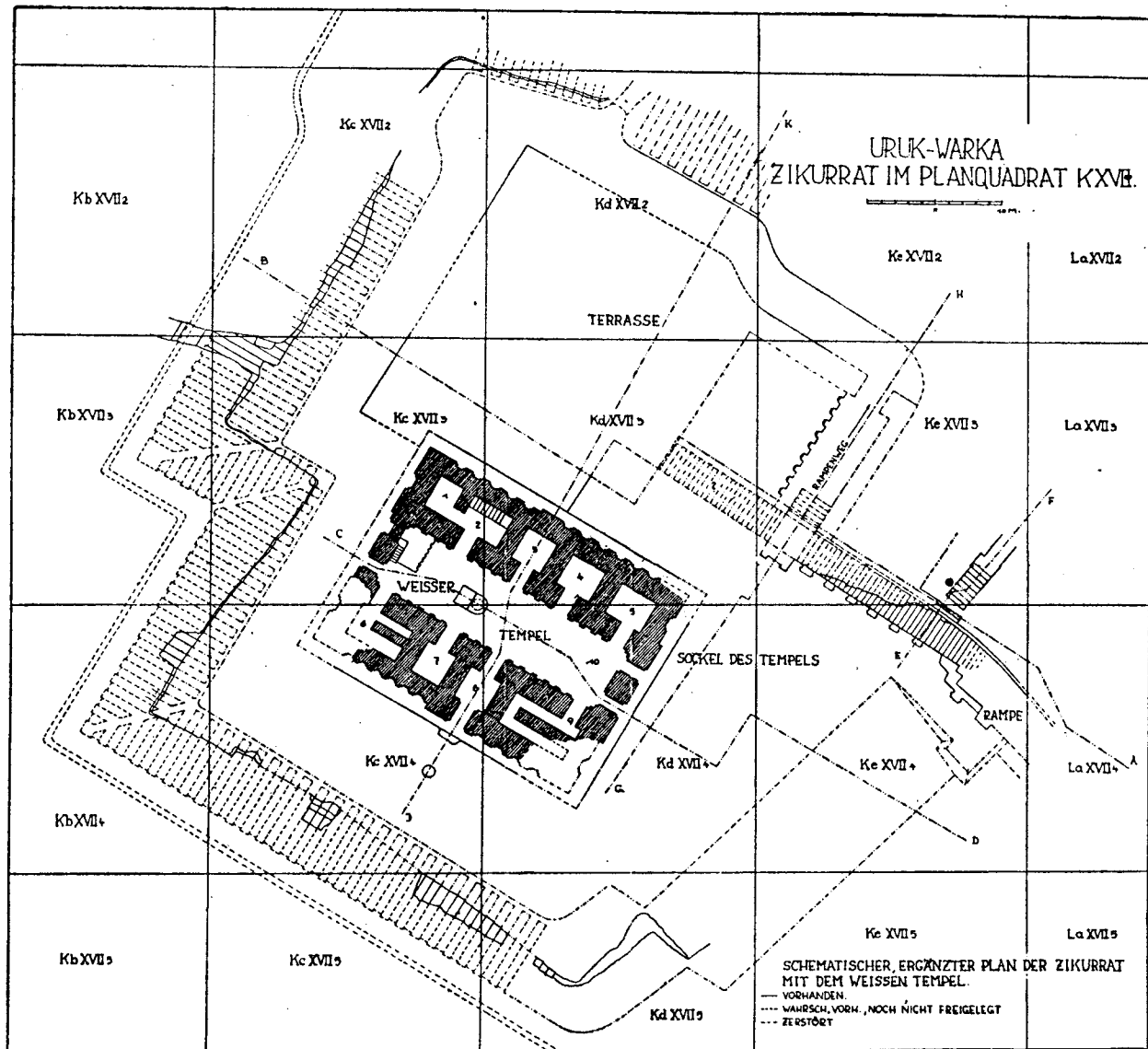


FIGURE 5. Plan, White Temple on Anu ziggurat, Warka, Uruk Period. After Lenzen 1941: Pl. 2b.

like the day” (Borger 1967: 78, ll. 11–13)—an effect which may be experienced on the exteriors and in the interiors of many places of worship today, from Christian pilgrimage churches to Hindu, Sikh and Buddhist temples.

The gleam in these latter cases is physically the result of the metals employed and could be dismissed as literal references to opulence in display; however texts further suggest that the material serves as the physical means of conveying a far wider range of positive value associated with shine. The luminous qualities associated with the sacred in Mesopotamia have recently been enumerated by Ilse Bruschweiler. From her observation that the terms used for the sacred are also used to refer to the sacred nature of persons or things *in contact with* the divine, she concludes that evidence of this contact is often manifest as light, the visible form of the vital life-force infused *by* the divine (Bruschweiler 1987: 187–9).

When applied to things, brightness also suggests purity—the state *par excellence* of that which has been touched by, or is prepared to come into contact with, the sacred. And if the sacred is manifest as luminous, then reciprocally, that which shines will be sacred. To the



FIGURE 6. View, White Temple on Anu ziggurat, Warka, Uruk Period. [Harvard Fine Arts Library Visual Collections Photo Archive].



FIGURE 7. Copper panel from Ninhursag Temple, al-Ubaid, Early Dynastic III Period. British Museum, London: WAA 114308.

extent that the resultant lustre is part of the “affect” of the work in question, the informed viewer will see shine not just as a physical property, but as a sign conveying highly positive affective charge (Winter 1995).

For that reason, not only temples but also cult vessels and objects are regularly described as gleaming or shining. In a Neo-Babylonian text of Nabonidus in the 6th century



FIGURE 8. Spouted silver jug from PG 800, Royal Cemetery, Ur, Early Dynastic III Period. University Museum, Philadelphia: U.11837.



FIGURE 9. Limestone plaque of libation before goddess Ninhursag, Tello, Early Dynastic III Period. Louvre, Paris: AO 276.



FIGURE 10. Detail, limestone Stele of Ur-Namma—2nd register of restored version (presently dismantled), found Nanna Precinct, Ur, Third Dynasty of Ur. University Museum, Philadelphia: CBS 16676.

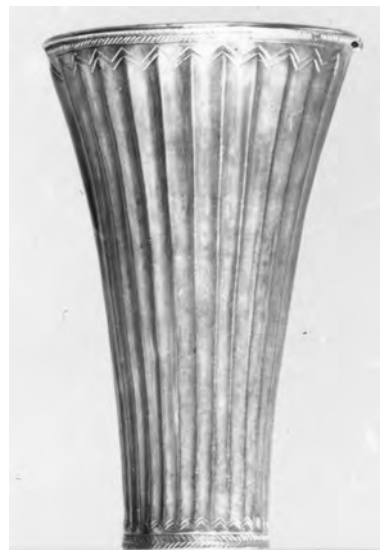


FIGURE 11. Gold Beaker, PG 800, Royal Cemetery, Ur, Early Dynastic III Period. University Museum, Philadelphia: U.10453.

B.C., for example, the consecration of a cult vessel is recorded for the temple of Enlil in Nippur. We are told that it was “made fitting,” and then that it was made to shine as bright as the day” (CAD A2: 328, *as~mu*). The sequence from being considered “fitting” for cult purposes to shining is thus explicit. In fact, several of the words for holy or pure convey qualities of light as well. One of the Sumerian terms for holy, *ku₃*, is used as a component in the writing of silver, *ku₃.babbar*—the primary material for ritual objects, as may be seen in vessels from the Royal Cemetery, Ur, and from Tello (see on this, Wilson 1994). The Akkadian equivalent, *ellu*, “clean, pure,” also has a clear secondary meaning of brilliant, referring to shining purity (CAD E 104, *ellu* 1c). I would argue that the use of silver and gold for cultic purposes is thus not only because of the value of the metal, but because of the properties of shine they possess.

Recognition of such cultic vessels in the archaeological record is sometimes obscured by our own secularization of materials and commodities. A silver vessel from Ur, for example (Fig. 8), was long exhibited at the University Museum in Philadelphia with no explanatory label, as if part of a secular dinner set. Yet, when one looks at other finds of the same period, including an incised shell plaque from Ur showing a nude priest holding just such a vessel before a divine standard (Woolley 1934: Pl. 102b), or a limestone plaque from Tello showing a similarly nude priest libating before the goddess Ninhursag (Fig. 9), it is clear that some types at least were clearly used specifically for cultic libations (and see now, discussion in Zettler and Horne 1998: 136, #110). The shape does not automatically tell us what the contents would have been for the cultic act: water, oil, wine, or beer; but we can recognize the sacred function for which it was employed. And I would suggest that, as the Eucharistic chalice is for Christianity, so the pure, shining libation vessel was for ancient Mesopotamia—the receptacle that in itself virtually stood for cultic practice.

To the extent that shine is a signal of purity and sacredness, the shining vessel is declared appropriate for use in the cult; and to the extent that shine is both physically manifest and positively charged, it is a property that would engage a positive visual response in the viewer. Thus, the informed viewer would be able to recognize the material from a relief representation of a known vessel-type: as, for example, a vessel depicted in use on the Stele of Ur-Namma, similar in shape to a gold beaker from the Royal Cemetery (Zettler and Horne 1998: 133, #105; Moortgat 1969: Fig. 194; our Figs. 10 and 11).

The property of shine is ascribed to materials other than precious metals as well—for example, when we are told by Sennacherib of Assyria that he decorated his palace at Nineveh with alabaster gateway figures, “whose bodies shone like the bright day(light)” (cited CAD N1 216, *nam~ru* 3d; and see the gateway colossi of his father, Sargon II, from Khorsabad, Fig. 12). Here, too, the gleam is likely to be at least in part a result of the whiteness and crystalline structure of the stone, and would account for the number of and value accorded to alabaster vessels found in elite contexts throughout the Mesopotamian sequence (e.g., from Ur, Zettler and Horne, eds. 1998: 153–8, #s 124–135; our Fig. 13); but once again, beyond the merely material, the reference to shine suggests the whole cluster of positive attributes.

The quality of shine is in some cases associated with “life” itself. In Esarhaddon’s reference to the renewal of the Babylonian gods in Assyria, his workmen made them truly splendid, radiant with vitality, and made them shine like the sun,” *usanbitu k\$ma samsi* (Borger 1967: 84, r. 38). These images had been taken from Babylonia—a common Assyrian practice with conquered peoples, illustrated best by a relief of Tiglath Pileser III, in which soldiers are clearly carrying off captured statues (Barnett and Faulkner 1962: Pl. XCIII). By



FIGURE 12. Gateway bull lamassus of Sargon II from Citadel Gate A, Khorsabad, Neo-Assyrian Period. Field photo, The Oriental Institute, Chicago.

describing the gods (images) as shining, the Assyrian king is telling us that they had been brought to a state in which they appropriately manifest the divinities whose form they represented.

Conversely, a darkened image or temple implies neglect or decay (see various references, CAD N1 215–216, *namaru* 3d). Indeed, there are relatively few cases in which darkness is coded positive, and these are virtually all instances in which lustrousness is nonetheless manifest, as with the lustrous dark stones like diorite and lapis lazuli (Winter 1999). It would appear therefore, that the operative value is not so much light vs. dark as shine or lustre vs. the lack thereof.

Finally, to the general physical attribute of shine must be added an additional quality apparent also as light, but with such an intensification of brilliance that a sense of power is also conveyed, thereby evoking awe, dread or terror in the viewer. There are several terms associated with this emanating power, and all have aspects of, or have at one time been translated as “awesome radiance.” They are essentially qualities ascribed to deities and the divine; but by extension, they are also conferred upon rulers, or described as among the inherent characteristics of temples and cult objects as well as implements and emblems of royal power. Both Elena Cassin (1968) and Paul Garelli (1990) have dealt with the importance of this intense light-bearing “radiance” with respect to both aesthetics and the divine in Mesopotamia—an outward manifestation of luminous (and numinous) power.

One such term/concept (Sumerian *me-lam₂*, Akkadian *melammu*) is frequently translated “splendor,” which it certainly conveys, but may more accurately be rendered as a physi-



FIGURE 13. Alabaster/calcite vessels from PG 800 & 1130, Royal Cemetery, Ur, Early Dynastic III Period. University Museum, Philadelphia: U.10882, U.11785.

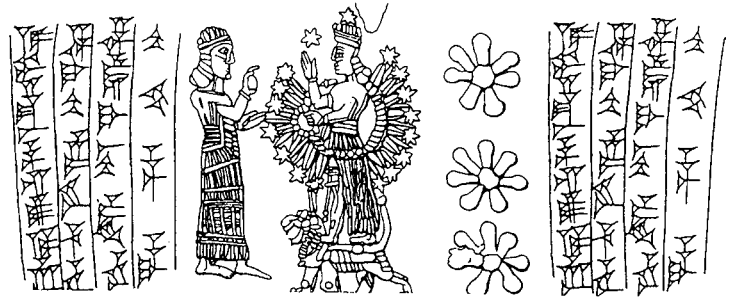


FIGURE 14. Drawing of Seal impression, seal of Nabû-usalla, showing worshipper before Ishtar on lion, Neo-Assyrian Period. [Private collection, Japan; after Parpola 1997: Fig. 10].

cal emanation or “aura” surrounding its bearer (see discussion in Winter 1994). It can stand as a quality in its own right, an attribute of a deity, ruler, or entity; or it can be qualified by juxtaposition with another attribute, as in Akk. *melam-birbirruka*, “the aura of your luminosity,” in order to strengthen the particular power being conveyed (see CAD B 245, *birbirru*).

Essentially, *me-lam₂/melammu* is a property of the gods in their most awesome aspect. Inanna, as goddess of battle, is described as *ni₂-me-lam₂ gur₃-ru*, “bearing (a) dread aura” (Bruschweiler 1987: 170–171). What is being referenced is the goddess’ fearsomeness, appropriate to battle; visible as the luminous manifestation associated with both protective and destructive power. Simo Parpola has suggested, in fact, that the radiant circle one sees around the body of the warlike Ishtar on Neo-Assyrian cylinder seals, should be identified with the goddess’s *melammu* (Parpola, 1997: xxix; see our Fig. 14). I wish it *were* the case, as then we would have a clear visual sign of the property, just as the halo is used in Byzantine and Christian art to indicate the divine qualities of sacred figures. However, virtually ALL gods are said to be invested with *melammu*; but only Inanna/Ishtar is so represented. I would suggest, therefore, that a more compelling explanation for the goddess’s iconography is the astral association with aspects of the Venus star. Indeed, the goddess’ name is written often with a logogram for star (MUL) or using the plural of “stars” as part of an epithet (*nin₉-mul-mul*, “lady of (the) stars”; Bruschweiler 1985: 105, 114 and esp. 150); and in her astral guise, is also referred to as “queen of heaven” (*sarrat sam~mi*) and “sparkling stars (plural)” (MUL.MES *sarār[u...]*; cited CAD S2 143, *sarāru* e). On these grounds, I think we MUST conclude that on the seals as well, the surround of the goddess is a reference to her astral association, hence “brilliant, shining,” but not literally to her *melammu*.

Kings as well as gods are endowed with this radiant aura, according to many royal inscriptions. For example, one of the epithets by which the Middle Assyrian king Tiglath Pileser I is identified is as one “whose aura overwhelms the regions”; while in the narrative portion of the same text, the king states in the first person that “the aura of my heroism” overwhelmed the enemy (Grayson 1991: 13). And yet one is hard-pressed to identify the quality of *melammu* in the image of his near contemporary, Tukulti-Ninurta I (e.g., Moortgat 1969: Fig. 246; our Fig. 15), or in statues of the later Assyrian kings who also claim this property (on which, see Winter, 1997: 373).

Insofar as *melammu* is said to be visible and have the power to overwhelm one’s enemies, it is a vital force or energy field contained within and emanating from the ruler it sur-



FIGURE 15. Gypsum altar of Tuku-Iti-Ninurta I from Ishtar Temple, Assur, Middle Assyrian Period.



FIGURE 16. Gypsum trial piece with Shamash, Assur, Neo Assyrian period.

rounds. Later Islamic painting found a way to render this as an attribute of kingship, not just divinity, as the 16th century Mughal ruler, Shah Jehan, is shown with a radiant halo (e.g., Skelton, 1988: Fig. 5 and discussion 180–181). However, no such strategy was employed in Mesopotamia.

Me-lam₂ or *melammu* is also vested in temples, weapons, and other objects. Gudea's temple for Ningirsu, for example, is said to have been possessed of a "fearsome aura" (ni₂-me-lam₂; Edzard 1997: 97, Cylinder B, col. xvi, 4). A hymn to the temple of Enlil in Nippur, preserved today only as the Ur III temple platform, calls the shrine a "radiant house," its Adread aura (ni₂-me-lam₂-bi) reaching to heaven" (Riesman n.d.); and a hymn to the temple of Nusku at Nippur describes it as a "house with fiery aura," (me-lam₂-hu; Sjöberg and Bergmann 1969: TH4, 48). Modern restorations do these monuments scant justice, with their austere walls and minimal furnishings, and it is necessary to visit modern shrines currently in worship to have some idea of the multi-sensory impact such temples would have had. Objects created as cultic paraphernalia are also frequently described as possessing such an aura (for example, a mace referred to in the literary composition known as *Angim*, a weapon whose "awesome radiance covers the land" (cited PSD A2: 120, a₂-zi-da).

The quality of me-lam₂/*melammu*, then, is an attribute of gods, extended by them to kings, and manifest as well in temples, some palaces, and significant objects (and just as it can be endowed by the gods, it can also be lost or taken away—the threat of such loss being a potent constraint upon the actions of rulers). As a palpable radiance, it carries with it the connotation of divinely endowed and awe-inspiring majesty. Additional terms, such as Akkadian *namrîrrû*, *salummatu*, and *sar uru*, and also have implications of light and brilliance, and are associated with weapons, temples and ornaments for divine images (see CAD N 258, S1 203–4, and S2 143, respectively). The nuances that distinguish these light-bearing terms

need further study; but I would suggest that the qualities distinguishing one from another have not been adequately differentiated in our field. The semantic range of individual terms seems to have overlapped significantly, although the range of qualities conveyed are likely to have originated in differing aspects of brilliance, distinguishing, for example, the steady gleam or twinkle of astral bodies from the dazzling shimmer of light on water or the red glow of fire.

A crown made by Esarhaddon for the god Assur provides a good textual representation of these properties (Borger 1969: 83, r.33), although the physical reality can only be suggested by the visual representation of crowns worn by the same god: for example, as shown on Sennacherib's Bavian and Maltai reliefs (Bachmann 1927: e.g., Pls. 7, 9, 10), or as depicted on contemporary or slightly later trial pieces from Assur (e.g., Fig. 16). The Esarhaddon text delineates the qualities of the crown through a string of attributes, and by the literary device of providing each attribute with its own active verb. It is:

<i>labis melammu</i>	wrapped in (all encompassing) aura
<i>za'in baltu</i>	adorned (sprinkled) with vitality
<i>nasi salummatu</i>	bearing shimmering light
<i>hitlup namrirri</i>	covered with radiance.

Such properties could have been applied to a bronze horned crown presently in the *Bible Lands Museum*, Jerusalem, were it complete and the metal not oxidized (Muscarella 1981: No. 47). It demonstrates in metal a type of headgear frequently represented in stone sculpture (e.g., from Old Babylonian Mari, Moortgat 1969: Fig. 215); in addition, holes remain where costly stones would have been set. A good textual parallel exists in a Kassite reference to a crown for the god Marduk, said to have been made of gold, lapis and precious stones (cited CAD S1 284, *salummatu*)—its visual effect probably not unlike that of the *Bible Lands Museum* piece [making it all the more lamentable that the latter is without archaeological provenance or certain date]. Whether originally overlaid with gold, or just shining with the natural gleam of new bronze, the Jerusalem horned crown (along with the crowns for Marduk and Assur) are probably the direct ancestors of jeweled crowns worn by Christ on Byzantine icons some 2500 years later.

The string of attributes provided for Esarhaddon's Crown for Assur may well reflect literary hyperbole; however, by its luminous aura, shimmering with light, pulsing with vitality, and glowing with intense radiance, the crown's overall aspect is suggested to have been nothing less than the sum total of awesome splendor attributed in other contexts to the gods and rulers themselves. The same could be said for the temples, gateway colossi, and other works described as bearing these properties. Indeed, the closer the works are to association with divinity, the more they seem to have been invested with light-bearing properties—whether the bright lustre of gold and silver, or the dark lustre of lapis and diorite. "Physical" shine is then used metaphorically to convey both life-force and contact with the divine.

It is therefore my thesis that shine and radiance were not merely external, material properties of a work. Rather, the ascription carried at least three levels of reference: first, the manifest, visible attribute; second, the inherent characteristic, or power, for which the visible property was the sign; and third, the emotional response appropriate to each. Indeed, this is what makes a single word in Sumerian or Akkadian so awkward in modern translation, as we are forced to present the three levels as a string of modified qualities—as in "awesome divine radiance." This is, I believe, what *gloria* represents in Christian tradition, *kevod* in Hebrew: comparable to "rays" that were said to be emitted from the head of Moses

after direct contact with God, conventionalized in later representations into a visible halo, or even a full-body aura. It is also familiar in Buddhist and Islamic art, where light is equally associated with manifestations of the divine.

For Mesopotamia, radiant light constitutes *the most positive* visual attribute described in text—the primary means by which the sacred was made manifest. And yet, the representational means for rendering such an abstract property visually were not well-developed. Just as for the devout Christian a holy card taken away from the pilgrimage site serves as a token reminder of the splendor of experience within the shrine—a visual aid for the whole sensory experience: auditory, olfactory, gustatory, tactile as well as visual—so also for the Sumerian standing before a monument such as the Stele of Ur-Namma: the cultic representations on our seals, plaques, reliefs and stelae are but notational devices that must be related to experience and quickened by memory to be fully internalized. For us, as observers at a distance, what an “image” of a god or king, or a highly charged work such as a temple, could have evoked in an ancient Mesopotamian viewer must therefore be enriched not just by architecturally-correct reconstruction drawings and contextual analysis, but also by textual description, if we hope to call forth the deeper sets of associations and properties than the merely typological in pursuit of ancient experience.

Acknowledgments

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The Case of the Missing Cult Statue

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Abstract

The search for a good example of remains of the anthropomorphic, divine cult statue described in cuneiform literature has not been fruitful, so far. While some cult statues were taken as booty or even destroyed by enemies, this seems unlikely to account for all of them. Laments and related literature usually do not describe the destruction of the cult statues. This may be because the statues were removed from the city, before it was destroyed, to be hidden and to await better times. It is also suggested that when a temple cult came to an end, cult statues were disassembled with the same care with which they had been made, partly for recycling and partly for burning. Varied evidence from both texts and archaeological remains is used to develop these hypotheses regarding the end-times of cult statues.

Introduction

The general question addressed here is this: *Why have the remains of a cult statue not yet been found?*¹ In the following discussion, possible meanings for various other remains found in buried temples will be suggested.²

Appearance and Activities of Cult Statues

Many things are already known about the appearance and activities of cult statues, from art (Seidl 1980–83: 314ff.; Dick 1999: 33) and from the cuneiform texts (Renger 1980–83: 307ff; Dick 1999: 33).³ Mesopotamian art depicts some cult statues on cylinder seals, wall reliefs, molded terra-cottas, etc. The statues are shown inside temples, in parades, in boats.

1. There seems to be general agreement that the remains of such a statue have not yet been found in the archaeological record of ancient Mesopotamia (see, e.g., Matsushima 1993: 210; Seidl 1980–83: 314ff.; Postgate 1992: 118).

By “cult statue” is meant the large, anthropomorphic divine statue of a god or goddess, on which was focused the cults of a large temple. I suggest that such statues have existed throughout Mesopotamian history, even though others have proposed that anthropomorphic cult statues did not exist until the late third or early second millennium B.C. (see the discussion in Renger 1980–83: 308, and in Dick 1999: 33).

2. The latter topic is discussed at length in Bjorkman 1994, especially p. 469ff.
3. The textual evidence used here is limited in the way described by Bottero (1992: 269): “. . . it should be well understood that it [this outline] cannot take into account evolution over time because of the lack of significant numbers of ‘datable’ documents, evenly divided over time . . .”

Often, these cult statues seem to be approximately life-size, seated, and clothed, although there are several exceptions to that (Dick 1999: 34).

Textual evidence regarding cult statues adds more detail to the evidence from art. Descriptions of the actions of a god often refer to activities performed with the actual cult statue. The gods (that is, their statues) would take baths, eat and drink twice a day, change their clothes, sleep in special rooms, move into new temples, parade about the city for festivals, gather in temple courtyards with other divine statues, and go on journeys up and down the waterways to visit other gods and goddesses in their shrines (Sjöberg 1969; Oppenheim 1964: 184–193; Postgate 1992: 119ff.).

The texts also record that cult statues might be taken away as booty by victorious armies and sometimes be returned from such an exile, although the texts describe these mishaps as if it were the god's choice both to leave and to return. On rare occasions, texts admit that a cult statue was destroyed (e.g., Shamash of Sippar was destroyed by Sutean raiders), but of course this did not destroy the god, who could be worshipped through another symbol, as indeed Shamash was, after the destruction of his statue (Jacobsen 1987b: 20–23; Dick 1999: 33–34).

Construction

How was the anthropomorphic cult statue of a god constructed? There seems to be general agreement that cult statues had a wooden core which was covered with gold and/or silver sheet metal (Jacobsen 1987b: 15; Renger 1980–83: 310–311). One text says of tamarisk wood, “from its trunk, gods are made.”⁴ Other materials of which cult statues are said to be made are gold, silver, and various costly stones (Dick 1999: 44, 99ff.). Several gods or goddesses are mentioned as the ones who made the statue, but all are said to be manifestations of the god Ea (Walker and Dick 1999: 97). Some texts explain that these deities used the *qurqurru*-craftsmen actually to construct the statue.

Clothing

The gods had different garments for different occasions, as well as numerous items of jewelry, including tiaras which might be decorated with beautiful stones (Cagni 1977: 32). Two second-millennium year-formulae refer to the “golden garments of the gods” (Oppenheim 1949). One of them, a Kassite text, mentions four talents of reddish gold for a wonderful garment of Marduk and Sarpanitum—this is 240 minas or about 480 pounds, nearly a quarter of a ton of gold! However, the amount is “probably apocryphal” (Oppenheim 1949: 180), since a garment of such weight could well have crushed the statues.

Matsushima (1993: 213, note 15) gives a first millennium text listing various kinds of cloth garments contributed to Shamash's wardrobe. Six of these have a total weight of 40 minas, i.e., about 80 pounds, presumably over 12 pounds apiece. Oppenheim (1949: 173) notes a Neo-Babylonian text in which a *musiptu*-garment, together with its golden ornaments, weighs nearly 20 pounds.

As for jewelry, the inventory of Ishtar of Lagaba (Leemans 1952) and the Qatna Inventory (of the goddess Ninegal and “the god of the king”—Bottéro 1949) are well-known. The latter indicates that jewelry was not restricted to use by goddesses, as does an Old Babylonian

4. See Renger (1980–83: 310) for the various types of wood which might be used in the construction of a cult statue.

inventory from Tell Haddad, which lists jewelry belonging to the god Adad (Al-Rawi and Black 1983).

Rituals for Enlivening the Statue

After a cult statue was made, and before it was put into its temple, the fascinating rituals for enlivening the statue, including the rituals of washing the mouth (*mis pî*) and of opening the mouth (*pit pî*), had to be performed, so that the statue could speak, move about, smell incense, drink water, eat food, etc. (Jacobsen 1987b, Walker and Dick 1999; Reiner 1995: 139–143).

Cleaning and Repairs

As noted above, life for such a statue could be busy, leading to the need for occasional cleaning and repairs. The Poem of Erra (also known as “Ishum and Erra” or, “Erra and Ishum”—Dalley 1989: 282ff.) features the cleaning of Marduk’s attire as an important theme.⁵ According to the story, the removal of the cult statue of Marduk from its throne, in order to accomplish the cleaning, was a time of great spiritual and political danger for the whole country. As Cagni (1977: 33) puts it, it meant “the cessation of divine protection.” The causes of a statue’s need to be cleaned or repaired are rarely mentioned in detail (the aforementioned statue of Marduk was said to have gotten dirty in the Flood). One can imagine that, in less dramatic circumstances, time and activity led to dust and dirt collecting on the statue and on its garments and jewelry, and that moving it about might loosen the sheet metal skin. In addition, despite the selection of special wood for the core, it eventually would begin to dry out, shrink and crack. Golden ornaments decorating some garments could be removed for cleaning, which, as Oppenheim (1949: 174ff.) observed, should not refer to refining the metal but to repolishing, since gold alloys do not tarnish appreciably.

Additional reasons for cleaning and repair are suggested in a book of the Apocrypha known as “A Letter of Jeremiah.” While the Letter’s purpose is to attack idol worship, it nevertheless may preserve some accurate details, although whether they are as accurate for cult statues in Mesopotamia as for those in Palestine of approximately the fourth century B.C. is a matter for consideration. Following are miscellaneous verses about the cult statues.

- v. 17: “when they sit in their temples their eyes are filled with dust raised by the feet of those who enter.”
- v. 24: “Although beautifully trimmed with gold, the idols will not shine unless someone rubs off the tarnish.”
- v. 21: “..their faces are blackened by the soot of the temple.”⁶
- v. 20: “..creatures crawling out of the ground devour them [the statues] and their fancy clothes.”

5. However, the description of the cleaning process itself is rather general and mentions the use of fire. It is difficult to see how fire and heat could be used for cleaning, although they would be needed for the refining, casting, soldering, and annealing of metal, processes which suggest a complete reworking of the metal parts of the statue. Perhaps those who composed the Poem of Erra were not very familiar with the technical details of cleaning metal, or else some essential details from this fragmentary text are still lacking.

6. The soot may be explained by an earlier verse in which it is said that the priests “light more lamps than they themselves need.”

- v. 22: “Bats, swallows and other birds flit around the bodies and heads of the idols—
and so do the cats!”⁷

Thus, we have dust, soot, tarnish, insects, bats, birds and cats which probably intensified the need for cleaning the cult statue. In addition, there are a few textual references (see Jacobsen 1987b: 27) to the oiling or waxing of the god’s limbs.⁸ This would be a good method of preserving wood and also of preventing tarnish on metal. But eventually it could attract dust and soot.

Ending the “Life” of a Cult Statue

The preceding summary has shown something of how cult statues could be constructed, enlivened, active, stolen, destroyed, cleaned, and repaired. But what about times when—for whatever reason—the life of a temple and its cult came to an end? What happened to the building and its cult statue, not to mention other “living” items of cult equipment such as thrones, footstools, beds, standards, canopies, etc?⁹ To my knowledge, the texts do not specifically describe the fate of this kind of thing. But such artifacts are rarely evident in the excavated remains of temples. For this reason, I suggest that these cult artifacts were “undone,” and in particular, that cult statues, other than the few which actually may have been destroyed by enemies, were also undone, with much of the same care and accompanying ritual with which they had been constructed.

One of the reasons I propose this is by analogy with what I call the “death” of temples. The careful burial of temples whose “life” had apparently come to an end occurs throughout Mesopotamian history. An early example of this is the fourth-millennium cult building at Jebel Aruda—cleaned out, tidied up, filled carefully with mudbrick up to a respectable height, and then overbuilt with a platform which may have been intended for another structure, as the excavators suggested, but which I prefer to interpret as the “burial cap” for the dead temple. Further examples of such burial caps occur over the Nintu Temple at Khafajah, the Ishtar and Ninni-zaza Temples at Mari, the Area SS Building at Tell Brak, the “Constructions” on Tell K at Tello, the Ninhursag Temple at Al-Ubaid (Bjorkman 1994: 477), and Nuzi’s Ishtar Temple A (Bjorkman 1999: 107, 113). The deaths of temples could be commemorated by various additional means, such as that of the Riemchengebäude at Uruk which, following suggestions by Heinrich and Lenzen (see Bjorkman 1994: 486), seems to be a cenotaph for one or more dead temples in the Eanna area.

Why was the burial of such temples seen to be necessary? Perhaps it was for some of the same reasons that human burial was needed in Mesopotamia. The spirit of a corpse left unburied was thought unable to go to its new destination (Bottero 1992: 276). Such wandering spirits usually represented potential danger (Cooper 1992: 24ff.). In addition, it is a common theme in Mesopotamian literature that ruined buildings attract ghosts and evil spirits.

Given the care that was often taken to bury the house of the god, I find it easy to propose that similar care was taken to appropriately end the life of the cult statue itself. I propose

7. Black (1981: 56) notes a remark by Strabo that, in the Neo-Babylonian Nabu temple, bats were caught, pickled, and eaten, which at least seems to confirm their presence there.
8. Another text which may refer to the oiling of a cult statue’s limbs is mentioned in *Pennsylvania Sumerian Dictionary: The Sumerian Dictionary of the University Museum of the University of Pennsylvania*. A/II: 103b—see the references there.
9. For references to offerings made to locks, gates, drainpipes, etc., see Postgate 1992: 313, note 186, Bjorkman 1994: 487, and Selz 1997.

that a cult statue belonging to a cult which had reached its end was disassembled and partly destroyed and partly recycled. The fact that it was theologically permissible to recycle metal which belonged to the god, even to its body, is clear in texts from Alalakh and Mari (Na'aman 1981: Reiter 1997: 428–29). The valuable stones, clothing, and jewelry which were part of the god's wardrobe were probably recycled as well, judging from the dearth of such things in excavations.

The wooden core of the body may have been deliberately burned, perhaps along with other flammable wood or reed items of cult equipment. One could ask, if the metal and stone were recycled, why not also the wooden core? Perhaps it was, but I wonder if sometimes the wood might have been in a more deteriorated condition than the metal and the stone. In addition, I am intrigued by a comment in the Sumerian poem, "Gilgamesh, Enkidu and the Netherworld," in which the after-death fate of a person who had been consumed by fire is described as follows: "his ghost does not exist, it went up with the smoke to heaven" (Cooper 1992: 26). Thus, it might be that whatever "life" the old cult statue may have had has been returned to heaven, from whence it came, in the act of burning its wooden core. I have offered the conjecture that, at Nuzi, an area in the courtyard just outside the cella door of Ishtar Temple A may have been the place where the cult statue's wooden core was burned, since there is evidence of a fire there, following which the charred mudbricks were turned over to restore a better appearance to the courtyard, before the whole temple complex was buried (Bjorkman 1999: 106).

Assuming that the statue's wooden core, etc., were burned as part of the "death" of the statue and its cult, such acts could explain the frequent evidence of burning which appears here and there in buried temples but which almost never seems to represent a full-scale conflagration (see, e.g., Bjorkman 1999: 112, note 9).

What other things were left behind when a temple was buried? Again, judging by actual remnants, I propose that small, symbolic amounts of the sheet metal which covered the wooden core of the cult statue were left behind on the floor or in the fill. Sometimes, tiny gold or copper nails have been found, presumably indicating the way in which the sheet metal was attached to the wood (see the discussions of fill deposits which included such nails, from Mari, Tell Agrab, Tell Brak, Ur, and Uruk in Bjorkman 1994). Of course, the sheet metal scraps and nails may have been attached to the god's throne or some other wooden cult equipment, but, in any case, I suggest that these small amounts of metal were meant to symbolize the wealth that once had been there.

Another item which sometimes occurs in buried temples and which might be related to a cult statue is a single statue eye made of stone. Such single eyes (or parts of eyes) were found in buried temples at Assur, Khafajah, Tell Agrab, Tell Brak, Ur, Uruk, and Nuzi (see the evidence presented in Bjorkman 1994). Could these eyes have belonged to other statues, such as those of worshippers, minor gods or figures of animals? Perhaps so, and a comparative analysis of such eyes may point to an improved hypothesis in this regard. But if those single eyes had belonged to the cult statue, it is worth considering the symbolism of its having been left behind.¹⁰

In my opinion, it was the cultic personnel who selected the materials to be left behind in what I call such "fill deposits" (this is a new term which I have coined, in order to describe what I found to be the most common type of Mesopotamian votive deposit—see Bjorkman

10. Postgate (1992: 118) refers to a single "over-life-size" golden ear from the Shamash Temple at Mari.

1994: 300). These priests probably also conducted the appropriate rituals for such deposits. In his article on the burial of the monumental stone gate-lions at Zincirli, Ussishkin (1970: 128) suggests the same thing—the people who buried them were the ones to whom these things meant so much.

Are there direct textual references to rituals for the burial (rather than the repair) of temples, cult statues, or the like? There is at least one description, from a first millennium text from Assur, which says that when the workmanship of the god is too damaged for repair, it should be disposed of, at night, by being weighted down with about 80 pounds of metal and thrown into the river (i.e., sent back to the domain of the god Ea, who, as god of the craftsmen, had been involved in the making of the statue and its accoutrements in the first place) (Boden 1999; cf. Walker and Dick 1999: 107–108).¹¹ Obviously, this text does not describe a fill deposit, but it does illustrate the ritual nature of disposing of the artifacts of the gods.

Protecting a Threatened Statue

If a cult statue was threatened by enemies, what might happen to it? There is a genre of cultic song called *balags*,¹² and a first-millennium *balag* of Inana, entitled *Ashergita*, gives an interesting sketch of her cult statue, just prior to her temple being plundered. It says the statue was in the stern of a boat, i.e., in the cultic barge, and some of her treasures were in the bow of the boat. Of particular interest are the following lines, spoken by Inana.

That enemy entered my dwelling-place wearing his shoes
 That enemy laid his unwashed hands on me
 He laid his hands on me, he frightened me . . .
 He tore my garments off me, he dressed his wife in them
 That enemy cut off my lapis lazuli, he hung it on his daughter
 Now I tread in its former resting place
 Now I search for the place of the likeness of myself (Black 1985: 36)

These lines imply that the cult statue of Inana was large enough that its plundered garments and jewelry would fit the enemy's wife and daughter. The last line indicates that the statue, the "likeness" of herself, had been removed, since she is searching for its place. In later lines (319–320), Inana laments, "My treasures, my jewellery completely gone, All plundered, used up like a dead man" (Black 1985: 38) Of course there is nothing specific here about the fate of the cult statue itself—it is not said to have been destroyed by the enemy nor to have been taken away as booty. It is not in its former place, however.

11. The text is A 418, lines 23–29. The metal seems to be both a gift to the god and a practical matter of being heavy enough to cause the statue to sink and to stay under the water. If so, one could speculate that this may be an alternative way of disposing of the damaged wooden core of a divine statue. Such a core would need to be weighted down, in order to make it sink.
12. It would seem that the *balag* genre, with its theme of the destruction of cities and their holy places, would be a place where references to the "death" of temples and statues might be found. As Black (1985: 12) notes, the *balags* of Inanna "abound in references to discontinued cults, haunted buildings and ruin mounds. . . At many moments in Mesopotamian history the spectacle of an abandoned and ruined sacred building must have been a recurrent feature of the landscape." But, in fact, it has proven nearly impossible to connect these *balags* with any historical destructions of particular temples. *Balags* seem to be "an expression of a particular interpretation of theology" (Black 1985), comprised of phrases which, like modern love songs, can be entirely believable and not at all a reference to any specific experience.

But where might such a statue have gone, assuming it wasn't destroyed by the enemy or taken as booty? Again, I find a passage from the Apocryphal "Letter of Jeremiah," v. 48, to be suggestive: "When war and disasters befall the gods, it is the priests who discuss amongst themselves where they and their gods can hide." I find this to be a concept worth considering, viz., that the cultic personnel responsible for the care of the cult statue did not always just sit and wait for disaster to catch up with them, especially since many disasters seem to have been months in the making, judging by descriptions of sieges, famines, and the like. I suggest that this concept may help elucidate some phrases found in Lament literature, in which the gods and goddesses are said to leave the city when danger threatens it. For example, in the Lament over the Destruction of Ur, the goddess Ningal at first refuses to leave, then does depart from the city, after which the temple and its treasures are sacked (Jacobsen 1987a: 453ff.). Ningal is said to have found no rest, no dwellingplace. In the Uruk Lament, a monstrous threat approaches which will eventually destroy the city. The protective *sedu* and *lama* deities are said to run away to "hide in the steppe"—it adds, "they took foreign paths." Then the city's patron god turned against the city, and thus the Lament says that "all its most important gods evacuated (Uruk); they kept away from it; they hid out in the mountains; they [wandered about] in the haunted plains" (Green 1984: 268).

One may of course take such descriptions as merely poetic, but I suggest that some of these might be taken more literally, i.e., the gods (viz., their statues) really did take strange/foreign paths, hide out in the mountains, etc. How the priests (or whoever) managed to get nearly life-size statues out of the city would be a matter for interesting speculation elsewhere.¹³ However, the symbolism of the gods' leaving represents divine abandonment; the city can be destroyed only after its god has left. Cooper (1983: 34, note 8) interprets this concept as follows: "Divine abandonment is the mythological expression of the looting of an enemy's sacred images.." While this is possible, I think it is equally likely that the valuable cult statues were, in one way or another, removed from danger before the city fell to the enemy. Thus, literally, the gods did leave the city before it was destroyed. Laments and other literature sometimes mention that a temple's statuary was destroyed in an attack, but such notices are very rare and are not specific as to which statues were destroyed—were they the cult statues? statues of lesser, protective deities? statues of rulers and their families? worshipper statues?¹⁴ Thus I reiterate my hypothesis that some cult statues may have been taken out of a city before it fell to an enemy. The subsequent fate of cult statues which took "foreign paths" or hid out in the mountains and steppes is a topic for another time.

13. And, of course, this proposal does not make entire sense of the Inanna passage from Asher-gita, cited earlier, since it says that the enemy stripped the jewelry and clothing off her statue, meaning presumably that the statue was still in place. One could speculate that, once the finery was stripped off, the appearance of the statue was not so impressive that the enemy wished to take it away, the more so, if the precious metal "skin" were also stripped away. In that event, the priests would be left with the task of dealing with the wooden core.

14. The vagueness of the literature on this matter fits with the vagueness of the historical veracity of this type of literature. Similarly, in the account of Esarhaddon's return of Marduk's plundered statue to the Babylonians, Sennacherib had claimed to have destroyed both temples and gods, but Esarhaddon speaks, not of making a new statue, but of renewing the original (Porter 1993: 46, 140ff.; see also Walker and Dick 1999: 63, note 21).

Conclusions

I have offered two hypotheses to account for the fact that the recognizable remains of a Mesopotamian cult statue have not yet been found, despite over a century of excavations which so often have concentrated on temples and palaces. The first hypothesis is that when a cult ended, such statues were disassembled, partly for recycling and partly for burning. The second hypothesis is that in times of danger, statues sometimes were taken out of the city secretly and hidden away to await better times.¹⁵

15. One of the corollaries of these hypotheses is a plea that more archaeologists analyze the remains of fire and of miscellaneous interesting material scraps found in temple excavations as possible ritual remains, rather than as sloppy looting by enemy soldiers.

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Archaeology and Ancient Israelite Iconography: Did Yahweh Have a Face?

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Abstract

Biblical scholars have traditionally assumed that the cult of Yahweh in ancient Israel was aniconic, in keeping with the second commandment forbidding the “making of images”. Recent archaeological evidence, however, shows that both Yahweh and a female counterpart, Asherah, were represented by a variety of symbols, especially in rural shrines and in households. This paper will illustrate many of these finds, from the 12th to the early 6th century B.C. The results illuminate “popular religion”, in contrast to the “books religion” of the Bible.

Introduction

In the last decade or so, the topic of ancient Israelite religion has again come to the fore, often with a focus on “popular” religion and practices, and with increasing emphasis on archaeology, or the “material remains of the cult.”¹

In this paper I will address only one issue characterizing the current discussion, namely whether ancient Israelite religion was truly “aniconic”, as usually maintained by Biblical and textual scholars. I will use the abundant archaeological data that we now have to show that “popular religion”, at least, was not aniconic. The results may help to illuminate the “official” cult enshrined in the Hebrew Bible, or what Karel van der Toorn has aptly termed “book religion.”²

Recent Studies on Israelite Aniconism

The recent revival of interest in Israelite aniconism began in 1995 with Lund University’s Tryggve Mettinger’s *No Graven Image? Israelite Aniconism in Its Ancient Near Eastern Context*.³ After surveying a mass of evidence, including some archaeological data, Mettinger concluded that there were indeed many images of Yahweh in ancient Israel—particularly the frequently mentioned *massebôt*, or “standing stones”—but that since these are not anthropomorphic, Israelite religion was essentially aniconic. In particular, Mettinger intro-

1. For orientation to the earlier literature, see Dever, 1995a and extensive references there; add now Dever 1997. On “popular religion,” see further Ackerman 1992; Matushima 1993; Berlin-erblau 1996; van der Toorn 1996; 1997; Becking 1997; Niehr 1997; Uehlinger 1997 below.
2. See n. 1 above.
3. See Mettinger 1995; and cf. my review in Dever 1995b.

duced the term “empty-space aniconism” to describe the typical absence of images, as in the supposedly empty inner sanctum of the Jerusalem Temple.

In *The Triumph of Elohim: From Yahwisms to Judaisms*, Brian Schmidt (1995) and Diana Edelman (1995) again addressed the subject of Israelite aniconism. Schmidt begins by defining aniconism as “the imposition of a ban against the use of anthropomorphic, theriomorphic, or physiomorphic images to represent or house the deity as an object of worship in ritual performance” (1995: 77). This definition is equivalent to Mettinger’s “programmatic” or theoretical aniconism, in contrast to *de facto* aniconism, which both scholars acknowledged was widespread—the practical toleration of the use of various images. Schmidt then provides a good survey of the textual evidence in the Hebrew Bible for the existence of such images. His survey of the extra-Biblical textual data, however, which I regard as definitive, is confined mainly to the 8th century B.C. Hebrew inscriptions found at Kh. el-Qôm and Kuntillet ‘Ajrûd. Both of these mention the Goddess “Asherah” alongside Yahweh in a context of “blessing” and are accompanied by a few iconographic images presumably associated with blessings. Schmidt concludes with the suggestion that what we confront originally in ancient Israel is not aniconism or iconoclasm in the full sense, and that moreover the later orthodox, Deuteromistic literary tradition has lost even that memory, or at least suppressed it. Yet despite this provocative insight, Schmidt does not see its full implications for the study of “popular religion”, much less adduce the rich archaeological evidence that would support his view.

Another Biblical scholar, Berkeley’s Ronald Hendel, in a treatment entitled *Aniconism and Anthropomorphism in Ancient Israel* (1997), came much closer to the truth, precisely because he made much more use of the archaeological data. Hendel builds upon Mettinger’s notion of original Israelite *de facto* aniconism, manifested chiefly in open air sanctuaries. He does this by (1) adducing much more archaeological data, early and late—and (2) by elaborating on the Deuteromistic “political theology” as response to earlier traditions and practices. In particular, Hendel expands on Mettinger’s concept of “empty-space aniconism,” explaining it as a late development in which the political divine King triumphs. As Hendel puts it: “In the context of this new political theology, the empty divine throne exalts the celestial King while at the same time deleting the anthropomorphic image that mirrors and authorizes the political King” (1997: 226). If Hendel is right, then we must presume the earlier existence and use of anthropomorphic—i.e., truly “iconic”—images of Yahweh in ancient Israel.

The Israeli Biblical scholar Victor Hurowitz noted recently in a 1997 popular article, partly a review of Mettinger, that Israelite “material aniconism” was not only a late development, but nevertheless still implies “that the divine can inhere in a physical object” (1997: 68). In fact, it is only by that assumption that we can explain why in time all images were banned. My point is simply this: if Yahweh was thought to be physically present in inanimate objects, then these objects were not “mere symbols,” but were true icons—images that conveyed visibly the presence of the invisible deity. As Susan Ackerman has aptly observed: “In the ancient world, the image was the deity” (1992: 65).

Also in 1997 there appeared a full-scale treatment of aniconism in a volume of essays edited by Karel van der Toorn, aptly entitled *The Image and the Book: Iconic Cults, Aniconism, and the Rise of Book Religion in Israel and the Ancient Near East* (1997). The chapters by Bob Becking of Utrecht (1997), Herbert Niehr of Tübingen (1997), and Christoph Uehlinger of Freiburg (1997) all defend what was a minority opinion until recently, namely that there were images of the male deity Yahweh in ancient Israel, even in the Jeru-

salem temple. Uehlinger, in particular, adduces considerable archaeological evidence to illustrate cult statuary and its iconography, in general, keeping with the Freiburg school's belatedly appreciated emphasis upon visual representations. My paper here is, in effect, a reaction to Uehlinger's tour de force, which I consider a point of departure to all future discussions.

The latest treatment is that of Theodore Lewis, in an article entitled *Divine Images and Aniconism in Ancient Israel*, a review-article reacting to Mettinger's (1995) work (Lewis 1998). The outgrowth of a six-week seminar that I led in 1995 for the National Endowment for the Humanities for College professors, Lewis' survey properly includes a good deal of archaeological data. He moves well beyond Mettinger's focus on *massebôt* to consider other, possibly iconic representations of both male and female deities in ancient Israel, including the so-called "pillar-base" female figurines. Yet in the end Lewis still maintains that ancient Israelite religion in both its textual and material culture expressions, was aniconic—apparently because we have no clear anthropomorphic representations of the male deity (he does acknowledge the existence of Asherah in "popular" cults).

As we shall see, part of the difficulty in all the above analyses is semantic (What is an "icon"?), as well as deriving from the sometimes inept interpretation of archaeological data by non-specialists. To that data we now turn for illumination of the actual Israelite cult.

Archaeological Evidence for Iconism in Israelite "Popular Religion"

I have already suggested above that we define "icon" in a somewhat broader way, as any "image or representation" of a deity (following the Greek etymology), no necessarily anthropomorphic or theriomorphic. In that case, there is ample evidence of the use of icons to represent both Yahweh and his consort Asherah in ancient Israelite religious belief and practice. That is particularly true in what may be called "popular" or "folk religion," in contrast to the "religion of the book" now enshrined in the Hebrew Bible, where the unrealized ideal is indeed aniconism.⁴ Let us look at some of the archaeological evidence, which in my opinion is conclusive.⁵

1. *The "Bull Site."* In the hillcountry north of Jerusalem, in the Biblical territory of the tribe of Manasseh, a small, open-air hilltop shrine of the 12th century B.C. was excavated in 1978–1981 by Amihai Mazar (1982; 1983). It featured an enclosure wall—a paved altar-like area; a large standing-stone reminiscent of the Biblical *massebôt* (below); fragments of pottery, metal, and a terra cotta offering stand; and the prize find, a perfectly preserved bronze Zebu bull. The shrine is certainly early Israelite; but the bull is almost identical to a bronze bull found in the 1950's by Yadin in Late Bronze Age Canaanite levels at Hazor. As is well known, the principal epithet of El, the male head of the Canaanite pantheon, is "Bull," an obvious use of the symbolic ferocity and fertility of bulls.

One can hardly resist seeing Mazar's bronze bull figurine as an anthropomorphic representation of the Israelite deity Yahweh, who in many of the earliest texts in the Pentateuch is still known by the older Canaanite name "El," replete with epithets recalling the Canaanite deity.⁶

4. See general references in n. 1 above. On the Hebrew Bible as an idealist "minority report," see Dever 1994a: 5.

5. In the following discussion, I shall cite for the most part only the primary publications. The extensive secondary literature may be found in such recent works as Keel and Uehlinger 1998.

2. *Dan*. At Tel Dan, the site of one of the earliest cult centers of the Divided Monarchy, there has been brought to light on an elevated portion of the mound our best example of the Canaanite-style *bamôt* or “high places” condemned in the Hebrew Bible (cf. I Kgs. 12: 29–31, which apparently refers specifically to the Dan “high place”).⁷ A second, smaller cult installation found in the paved outer court of the city gate, and similarly dated to the 9th–8th centuries B.C., features a row of five small smoothed standing stones, fronted by a low bench on which were found several offering bowls. This is evidently an example of another feature everywhere condemned by the orthodox writers and editors of the Hebrew Bible, *massebôt*, or cultic stelae. A perusal of the passages mentioning *massebôt* shows that precisely what they do is to represent the presence of the deity. These stones are erected to commemorate an epiphany; a place where sacrifices and vows are made to the deity; and where religious covenants are seated. Older attempts to explain them failed for want of actual material evidence; but we now have ample evidence, in many examples from north to south, from the 9th to the 6th centuries B.C.⁸

If these *massebôt* symbolically represent the deity’s actual cultic presence, as they obviously do, are they not “icons” of some sort? Worshippers may have softened the divine image somewhat by refraining from portraying specific bodily features—feet, arms, or face (all mentioned, however, in Biblical texts)—but nevertheless these carefully dressed standing stones are, in my opinion, cultic “stand-ins” for the deity or deities. That they were in effect worshipped, or that at least worship was directed at them, is shown by the fact that offering bowls for sacrifices were found on the bench in front of Tel Dan’s standing stones. Of course, the idealistic Biblical writers condemn these *massebôt* as “pagan,” i.e., as reflecting Canaanite or Phoenician practices; but there is no reason to doubt that they were thought of by most people as authentically “Israelite.” That was the problem.

3. *Ta’anach*. Tell Ta’anach, near Megiddo in the Jezreel Valley, is clearly Biblical Ta’anach. Excavations by an early German team and then by an American team in 1964–1969 have brought to light a 10th century B.C. cultic installation that featured a shrine-like room; a hoard of sheep/goat knuckle-bones (astragali) used for divination; a stone mold for mass-producing female figurines; a massive olive oil pressing installation; and two large, multi-tiered terra cotta offering stands with a series of elaborate iconographic representations. The stand excavated by the Americans in the 1960’s features a quadruped bearing a winged sun-disc on its back—single and paired sacred trees; pairs of lions-cherubs; and, on the bottom register, a nude female figure *en face*, grasping two lions by their ears (Lapp 1967; Glock 1993; Mettinger 1995: 163–166; Keel and Uehlinger 1998: 154–160).

In the view of many interpreters, all of the symbols on this 10th century B.C. admittedly “Israelite” cult stand are icons. The quadruped (a bullock?), winged sun-disc, and cherubs are easily identified with a long tradition of West Semitic male deities, specifically Canaanite (and Israelite) El and Ba‘al. Both the tree and the lion imagery have now been persuasively connected with the divine consort Asherah, the West Semitic Mother Goddess. She is closely associated with trees and “groves” in the Hebrew Bible, Hebrew ‘asera usually referring to

6. On old “El titles,” see for instance, Cross 1973: 3–75; 1990: 7–12. Some scholars, however, doubt that Mazar’s bull is an El/Yahweh icon; cf. Mettinger 1995: 137; Hendel 1997: 218, 219; Keel and Uehlinger 1998: 118–120. Uehlinger himself, however, has now departed from this minimalist view; cf. 1997: 99–102.

7. See Biran 1994: 147–210; 1998; and on *bamôt* generally, cf. Alpert-Nakhai 1994.

8. On the *massebôt*, see Mettinger 1995: 140–191, conveniently citing much of the archaeological data. For Biblical references, see the older but still useful work of Graesser 1972.

a tree-like symbol of the goddess, either a living tree or a wooden pole. And a long series of extra-Biblical inscriptional evidence identifies Asherah (and her counterparts Astarte, 'Anat, and Elat) as the "Lion Lady." There can be little doubt that the imagery of the Ta'anach stand—exactly contemporary with the Solomonic Temple and the orthodox cult in Jerusalem—represent both El/Yahweh and Asherah in terms of powerful, traditional Canaanite symbolism. But both were Israelite deities by now.

4. *Tell el-Far'ah*. Tell el-Far'ah, northeast of Shechem and plausibly identified with Biblical Tirzah, the first capital of the Northern Kingdom in the 9th century B.C., was excavated by a French expedition in the 1950's-1960's. Among the finds was a *naos* or terra cotta model temple. Two fluted columns with palmette capitals—representations of the typical West Semitic "sacred tree," a divine symbol—flank the empty doorway. On the lintel are a crescent-moon and dots signifying the stars of the Pleiades, astronomical symbols closely associated with Asherah/Astarte and her later Phoenician incarnation Tanit (Chambon 1984: Pl. 66; cf. Weinberg 1978; and especially Bretschneider 1991).

We now have a number of these Iron Age *naoi*, from the Aramean, Phoenician, Israelite, and Cypriot worlds, which have undeniable associations with Asherah. In Cyprus in late Iron Age contexts, several *naoi* are placed atop the heads of a goddess wearing the "Hathor wigs," which in Egypt always identifies the female deity as "Qudshu," the Egyptian counterpart of the Canaanite goddess Asherah. And some have an "Asherah" figurine standing in the doorway. In several earlier, Late Bronze Age Canaanite contexts, these *naoi* often have a female deity, or a pair of deities, standing in the doorway. The Tell el-Far'ah *naos* doorway is empty; but one can easily imagine a deity or pair of deities standing there. Today, the Goddess is not "at home"; but even the empty doorway is a powerful sign of her presence, an excellent example of Mettinger's "empty-space aniconism" (above).

5. *Tell Arad*. This Iron Age site, in the northern Negev desert east of Beersheva, was excavated by an Israeli team in 1962–1976.⁹ It consists largely of a small hilltop fort with an integrated tripartite temple, probably constructed in the 9th or 8th century B.C. and occupied into the early 6th century B.C. In the inner sanctum of the temple, equivalent to the *debir* of the nearly contemporary Solomonic temple in Jerusalem, two (or three) large, chisel-dressed standing stones were found, one smaller than the other—obviously examples of the *massabôt* discussed above. More significantly, these *massebôt* were found carefully laid down on their sides and covered by a plaster floor in a later phase of the temple's use. Aharoni, the excavator, argued that this was evidence of the cultic reforms of Josiah in the 7th century B.C. (cf. 11 Kgs. 23), but other scholars looked rather to Hezekiah in the late 8th century B.C. In any case, the significant point is that in the 9th–8th centuries B.C., in a demonstrably Israelite shrine or temple, there stood two impressive *massebôt*, almost certainly representing the conjoined deities Yahweh and Asherah.

As though to confirm the presence of the goddess Asherah at Arad, a small bronze lion-weight was found near the foot of the altar in the outer courtyard of the temple—an evocation of "Asherah the Lion Lady" (above). And if there were any doubts about the "Israelite" character of Arad, dozens of Hebrew ostraca from the 8th–6th century B.C. would remove them. Some even mention priestly families known from the Hebrew Bible, as well as a "temple of Yahweh," not the temple in Jerusalem but the local Arad Temple.

9. See Aharoni 1968; and cf. Herzog 1984; Ussishkin 1988. For secondary literature, see Mettinger 1995: 143–149; Ackerman 1992: 5 1; Albertz 1994: 83, 84. On the archaeological context of Josiah's attempted reforms, Dever 1994b.

6. *Kuntillet 'Ajrûd*. The site of Kuntillet 'Ajrûd is an 8th century B.C. combined fort/caravanserai incorporating a shrine, located in the barren eastern Sinai desert along the ancient route between the Mediterranean and the Red Sea. Excavated by Ze'ev Meshel in 1978, it has produced an extraordinary number of Hebrew wall-plaster inscriptions; scenes painted on large storejars; and votiv offerings.¹⁰ On one of the storejars the Hebrew inscription, a blessing formula, ends with the agents of blessing: "by Yahweh of Samaria and his Asherah." While some scholars take a minimalist view, reading the term 'asera as merely the tree-like symbol of the Goddess, others including myself read it as the Goddess Asherah itself.¹¹ Below and to the right of the inscription, there are two pictorial representations: a pair of Egyptian Bes-like figures; and a semi-nude female seated on the sort of lion-throne often connected with kings and deities in ancient Near Eastern iconography. I have argued explicitly that both the inscription and the female figure, although by different hands, refer to the Goddess Asherah, here coupled with Yahweh as "his" consort. If that is correct, then we have an indisputable example of a fully anthropomorphic representation of an Israelite deity. Some scholars have even argued that the two Bes-figures—one with what may be a phallus, and another with clear breasts—may represent Yahweh and Asherah.¹² But such an argument is unnecessary.

7. *Jerusalem*. It is widely recognized that Jerusalem in the Iron Age is virtually unknown from archaeological excavations, due to the lack of opportunities. Nevertheless, the Biblical descriptions of the Temple Mount in I Kings 6–9 and Ezekiel 40 may be accepted largely at face value, because we have several parallels to such temple complexes in 9th–8th century B.C. contexts in Syria, that is, in the Phoenician cultural milieu that the Hebrew Bible correctly recognizes as the inspiration for "Israelite" monumental architecture in the 10th century B.C.—architects and artisans from "Hiram, King of Tyre" (I Kgs. 5; cf. Handy 1997).

In its descriptions of the Solomonic Temple, the writers and editors of the Hebrew Bible candidly acknowledge that most of the architecture and furnishing, and certainly some of the iconography, was of Canaanite-Phoenician derivation—hardly "Israelite," yet readily borrowed. This is especially true of the Central symbols, the pair of "cherubs" in the inner sanctum (or *devîr*) of the temple (I Kgs. 6: 23–28). They are described as being some 15 ft. high, carved of olivewood, and overlaid with gold. These cherubs, or lion-sphinxes, have long since been identified as symbols connected with deities everywhere in the ancient Near East from the 3rd millennium onward. There can be no doubt that the cherubs in the Jerusalem temple were just that: representations of at least some aspect of the deity Yahweh. They may not have constituted a fully fleshed-out portrait, but they do signify the effectual presence and power of the deity. And they were in some ways "anthropomorphic," since virtually all known cherubs exhibit a human head, usually on a winged lion. There is no reason to suppose that the Jerusalem examples departed from the norm. Nor can the cherubs there, in the inner sanctum be dismissed as mere "symbols of divine protection," as they sometimes functioned on the well-known lion-thrones of kings in the ancient Near East (Mettinger 1987; Borowski 1995). They symbolize Yahweh's "effective presence" in his "house" (Heb. *bêth*

10. For preliminary reports, see Meshel 1979; Beck 1982. For secondary literature, see Dever 1984 and references; add now Keel and Uehlinger 1998: 210–248 and references there. Virtually every current discussion of Israelite religion now invokes the 'Ajrûd inscriptions, as for instance Olyan 1988: 23–37; Smith 1990: 85–88; Ackerman 1992: 62–66; Albertz 1994: 86–88.

11. See references in n. 10 above. On the Goddess Ashe-rah generally, cf. Smith 1990: 15–21; 80–114—Olyan 1988: *passim*; Wiggins 1993; Wyatt 1999.

12. See references in Dever 1994: 25, 26; and Keel and Uehlinger 1998: 217–223.

means both house and temple). A worshipper seeing these cherubs would no doubt have sensed instinctively that Yahweh, while supposedly invisible, was palpable here. Would the symbols, the icons, have been necessary? Perhaps not; but they would have been helpful.

8. *Figurines*. We now have more than 2,000 terra cotta female figurines from Israel and Judah, extending from the 10th to the 6th centuries B.C. Biblical scholars, and even some archaeologists, have often regarded these figurines as enigmatic; have interpreted them as *ex votos*; or have even dismissed them as toys or the like.¹³ But there is growing recognition that the female figurines were almost certainly representations of a female deity, in this case the only female deity appearing prominently in the Hebrew Bible, “Asherah” the old Canaanite Mother Goddess, consort of the high god El. The more than 40 references in the Hebrew Bible using the term ‘asera are always condemnatory. Sometimes it is obviously of an object, Re a living tree or a wooden pole that symbolizes Asherah who is proscribed (see above). But in several passages, the term ‘asera refers to the Goddess herself condemned because of her association with the Canaanite cult.

In the Hebrew Bible, Asherah is coupled with the still-dominant Canaanite male deity Ba‘al, rather than El. But we now have two 8th century B.C. extra-Biblical Hebrew inscriptions that refer specifically to Yahweh and his Asherah, in a context blessing, at Kh. el-Qôm and Kuntilet ‘Ajrûd. Thus in recent years many scholars have come to the conclusion (some reluctantly) that the Goddess Asherah was widely venerated in ancient Israel, especially in “popular” or “folk” religion, but in the official cult as well, often conceived as the consort of Yahweh (Olyan 1988: 3–14). If the common Iron Age figurines actually portray Asherah, as argued above, then they are by definition icons representing an Israelite deity, in this case with explicit and graphic human features, mostly sexual.

9. *Seals*. Biblical and textual scholars, usually having no training in art history, tend to overlook pictorial representations of cultic scenes on such items as Seals. In recent years, however, Othmar Keel and students of the Freiburg school have called attention to these neglected sources, Iron Age examples of which now number in the hundreds and hundreds (Keel 1997; Keel and Uehlinger 1998: xiii; cf. also Winter 1987; Schröer 1998; Avigad and Sass 1991).

There can be little doubt that many of the scenes depicted are cultic in general. But identifying specific Israelite deities such as Yahweh or Asherah is very difficult, since texts engraved on the seals refer only to the name and/or title of the owner. Nevertheless, it is plausible to relate images on these seals, such as bulls, lions, sphinxes, trees, sun, moon, stars, etc., to some specific deity, since all this iconography is otherwise connected with known deities. Indeed Keel and his colleague Christoph Uehlinger have adduced dozens of 9th-6th centuries B.C. seals that they do consider depict Yahweh, Asherah, or Ba‘al—all deities worshipped in ancient Israel, native or not. They stress, in particular, the astral symbolism on Israelite-Judean seals of the Neo-Assyrian and Neo-Babylonian period, probably depicting the “Most High God,” a prominent epithet of Yahweh in the Hebrew Bible. However, as Keel and Uehlinger point out, by the 7th century, under various reform movements, there is a tendency towards aniconism, many seals now bearing only the name of the owner. Yet, as they themselves note, such aniconism is a very late development.¹⁴

13. The most comprehensive study of the female figurines is now that of Kletter 1996, with full references to the literature. Kletter is still hesitant here about direct identification with the Goddess Asherah, and critical of my views. But in symposia papers and personal communications since then, he has come around to the Asherah identification. Add now the perceptive study of Burns 1998.

10. *Hands and Feet*. As we have already noted, we have no full anthropomorphic representations of the Israelite male deity Yahweh; but we may have some iconographic “body parts.” The first possible example is a deeply engraved human hand below the Kh. el-Qôm Hebrew inscription discussed above. Few interpreters have commented on the obvious symbolism. Like the much later Islamic apotropaic *hamzeh*, or Hand of Fatima, the hand here, in the context of a blessing for the deceased, is surely to be connected with many passages in the Hebrew Bible referring to “the hand of God” (Schröer 1983).

A second possible example of an anthropomorphic image, which no one seems to have noticed, is found on a 12th–11th centuries B.C. offering stand found at the early Israelite site of ‘Ai. Around the bottom of this stand there is a clear row of protruding human feet. I suggest that these feet may represent the cultic presence of Yahweh—a modest but visible sign of his reality and accessibility (Callaway 1993: 45). If this seems too speculative, I may cite the 9th–8th centuries B.C. Aramaean tripartite temple at ‘Ain Der’a in northwestern Syria, a close parallel in every way to the Solomonic Temple, which has deeply engraved into the ascending steps of the threshold first one giant footprint, then the other, and finally on the threshold two footprints: God “present in his house” (Monson 2000).

Conclusion

In many of the above instances where we have cited archaeological data, we may be dealing with a basic restraint, or “conservatism,” in the Israelite cult, which pays as it were lip-service to the Second Commandment. It certainly does not go as far as it does with the full anthropomorphic representation of the *female* deities, but nevertheless it dares to make use of some iconographic symbolism in its conception of Yahweh. This is hinted at in the works of Schmidt, Hendel, and Hurowitz discussed above, but it is more fully developed only by Uehlinger amongst Biblical scholars. It is the archaeological evidence that is compelling—the *realia* to be juxtaposed with the heavily “idealistic” portrait of the texts of the Hebrew Bible.

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14. Cf. Keel and Uehlinger 1998: 354–358. Yet Keel and Uehlinger are reluctant to connect any of the prolific Israelite and Judean seal iconography directly with Yahweh. In their conclusions, they reaffirm that Israel’s cult was aniconic, that “images shine only very faintly through the heavy veil of aniconic orthodoxy” (p. 403). Yet at the same time they think that “the people conceived Yahweh anthropomorphically, theriomorphically, in metaphors and in symbols of the widest possible variety” (p. 407). This seems entirely contradictory to me. Uehlinger’s later position on his own, however, recognizes a wide variety of archaeological attested icons of Yahweh, similar to my view here (1997).

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La communication du roi avec les dieux célestes: quelques `emarques sur une imagerie courante dans la glyptique paléo-babylonienne

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Préliminaires

Un phénomène des plus intéressants dans l'évolution du répertoire figuratif de la glyptique mésopotamienne entre l'époque post-akkadienne/III^{ème} dynastie d'Ur et la période paléo-babylonienne (qui inclut les dynasties d'Isin, Larsa et la I^{ère} dynastie de Babylone)¹ est représenté par l'augmentation considérable et la sensible diversification des scènes dont le souverain est le protagoniste.

Par rapport à la période précédente, c'est-à-dire l'époque de la III^{ème} dynastie d'Ur, où deux seules iconographies royales sont bien attestées—celle du roi trônant (fig. 1)² et celle du souverain en prière conduit devant la divinité assise sur son trône³ (fig. 2),⁴ à l'époque

1. La distinction canonique entre "Isin-Larsa" et "paléo-babylonien", soutenue également, entre autres, par H. Frankfort et par E. Porada, non seulement ne tient pas compte des événements politiques qui eurent lieu en Mésopotamie durant la première moitié du II millénaire av. J.C., mais elle veut aussi souligner la diversité—en grande partie simplement apparente—des résultats artistiques pendant les deux phases. Dans la première et dans la documentation provenant de la région du Diyala on adopte de manière "acritique" le répertoire de l'époque précédente; à partir de la seconde, au contraire, on assiste au développement d'ateliers de luxe qui déterminent des innovations dans le patrimoine figuratif de la glyptique locale: Frankfort 1939: 147; Porada 1948: 37–40. Différemment, A. Moortgat tend à remettre en valeur l'art de l'époque d'Isin-Larsa: à son avis, on y trouve déjà *in nuce* les développements originaux documentés pour la phase suivante: 1940: 28–31. Pour ma part, je préfère adopter le terme "paléo-babylonien" pour toute la séquence historique, et cela pour deux raisons essentielles: *primo*, parce que le jugement traditionnel, pas tout à fait positif, sur l'époque d'Isin-Larsa doit être revu à la lumière de la documentation, publiée récemment, qui provient de la Babylonie proprement dite (région de Larsa et Isin et de Babylone-Sippar); *secundo*, parce qu'elle forme avec la phase suivante une unique période, très homogène d'un point de vue artistique, où les innovations thématiques et stylistiques ne coïncident pas d'un point de vue chronologique avec les vicissitudes politiques.
2. Nous en avons un bel exemple avec le sceau en pierre verdâtre de Hash-amer, un fonctionnaire au service d'Ur-Nammu: Collon 1982: 168–169, n. 469.
3. L'étude globale de l'image royale à cette période est l'objet de ma thèse de doctorat: "L'iconografia regale nell'arte paleobabilonese: dall'età postakkadica alla prima età cassita. L'immagine della politica" En réalité, durant la phase la plus ancienne, compte tenu des deux principaux contextes où figure le souverain, ce dernier apparaît moins de fois même dans d'autres situations: dans l'acte d'offrir une libation, comme triomphateur ou, dans la statuaire courante, sous la forme canonique: assis sur son trône ou debout, c'est-à-dire "dans sa royauté."
4. Comme dans les sceaux de Gudea de Lagas, où le roi exprime iconographiquement son rapport privilégié avec la divinité: Delaporte 1920: T 108, Tav. 10, Figg. 8, 10.



FIGURE 1.

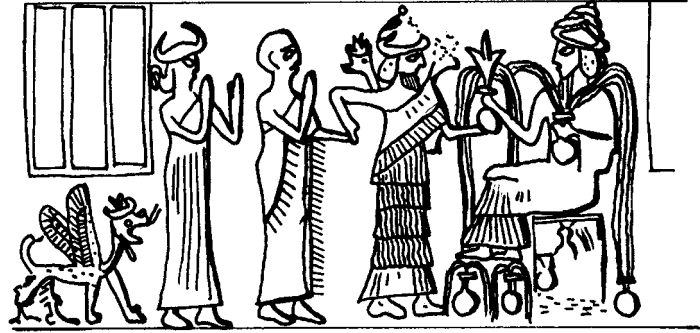


FIGURE 2.

paléo-babylonienne le roi figure dans de nombreux autres contextes, en partie inconnus précédemment: comme chasseur, par exemple, ou en opposition à un second souverain parfois de rang inférieur.

L'une des images nouvellement formulées dans la glyptique (et en partie dans la coroplastie) d'époque paléo-babylonienne est constituée par une figure masculine, généralement appelée dans la littérature archéologique "le personnage à la masse d'armes"; celle-ci comparait à partir du 19^{ème} siècle jusqu'à la fin, au moins, du 17^{ème} siècle av. J.C.⁵ et cela sans variations substantielles ni dans son aspect général ni dans les contextes où elle intervient (III. 2: 1).⁶

Dans les pages suivantes je chercherai à préciser d'une part les situations spécifiques où l'on adopte cette particulière iconographie royale ou pseudo-telle, de l'autre le sens du rôle particulier qu'elle joue dans l'organisation administrative des états babyloniens de la première moitié du second millénaire av. J.C.

L'iconographie du personnage à la masse.

La figure en question est toujours représentée debout, de profil, marchant (la jambe gauche est en effet légèrement avancée), le bras droit tendu et aligné avec le corps ou légèrement détaché, le bras gauche plié à la taille.

Elle porte généralement deux types de couvre-chefs: ou une tiare à calotte avec un haut bord replié ou un turban formé par un béret adhérent et un bandeau placé dessus et roulé autour de la tête.⁷ La robe cérémoniale ne présente pas de variations substantielles dans l'abondante documentation figurative à l'exception de la longueur et du type de bordure latérale. D'ordinaire elle est constituée par un seul morceau d'étoffe de forme irrégulière entouré autour du corps et drapé sur l'épaule gauche; un coin triangulaire, qui peut être doté d'une bande latérale striée, retombe sur la poitrine.⁸

5. Cette iconographie disparaît en effet entièrement du répertoire figuratif de la glyptique déjà à partir de la première période cassite.

6. Blöcher 1992: 44, 103 (empreinte sur une enveloppe de tablette).

7. Il s'agit de deux variantes de la tiare royale canonique, en usage en Mésopotamie de la période post-akkadienne à la fin de l'âge paléo-babylonien. La documentation figurative semble donner l'image d'un béret replié, mais je me demande si le bandeau superposé n'est pas en réalité un diadème appliqué sur le front. Cette hypothèse pourrait trouver un appui dans le type de coiffure caractéristiques des personnages féminins de rang princier: ceux-ci portent en effet un bandeau apparemment lisse noué derrière la tête. Une série de comparaisons iconographiques avec les périodes suivantes, achéménide, parthe et byzantine (où sont présentés certains aspects particuliers de la royauté orientale) se trouve dans Piras 2000: 18–19, Carile 2000: 81.



FIGURE 3.



FIGURE 4.

Ce personnage porte souvent, mais pas toujours, une barbe de forme singulière, peut-être postiche, caractérisée par de multiples boucles, larges et plates qui se séparent vers le bas ou sont recourbées latéralement.⁹

Dans la plupart des cas le bras gauche, plié à la hauteur de la taille, empoigne une masse cérémoniale constituée par une hampe complétée par une tête sphérique ou ovoïdale (parfois deux, une à chaque extrémité) ou encore par une terminaison triangulaire.¹⁰ La main droite est toujours fermée avec l'index tendu, mais je reviendrai ensuite sur ce point.

Les contextes généraux

Avec les caractéristiques indiquées ci-dessus le personnage à la masse figure dans quatre contextes différents: en face de la déesse Lama, en face des grands dieux célestes, en position secondaire dans des scènes plus complexes et, sous un aspect modifié, dans les contextes précédents ou comme combattant.

Dans la plupart des cas la figure en question est isolée dans le champ figuratif avec une divinité féminine mineure à la fonction tutélaire (voir ci-dessous).¹¹ Plus rarement, on le voit en présence de divinités majeures: Istar représentée (principalement) de face, sur l'avant-train d'un lion aux mâchoires grand'ouvertes et armée d'une masse à double tête de

8. Ce type particulier de manteau semble, toutefois, caractéristique de la Babylonie septentrionale (région de Babylone-Sippar), tandis que au sud (région de Larsa et Ur) il est remplacé par une courte tunique asymétrique. A Mari, sur quelques empreintes de sceau appartenant à des fonctionnaires royaux, ce même vêtement de cérémonie présente un bord formé d'éléments semi-circulaires caractéristiques de l'habillement royal local.
9. Selon Barrelet 1974: 35 ce type de barbe doit se référer à un aspect particulier de la personnalité royale, c'est-à-dire à la vitesse de déplacement du souverain d'un endroit à l'autre. En réalité 1) aucun élément donnant l'idée d'un mouvement rapide (position, drapé du vêtement) n'est associé à la barbe "flottante"; 2) celle-ci portée par le roi également dans des contextes différents, comme, par exemple, dans le schéma typique du triomphe militaire.
10. Dans ce dernier cas il pourrait s'agir aussi d'une flèche car, parfois, le personnage en question empoigne un arc au lieu de la masse: Klengel-Brandt 1989: 324, n. 80.
11. Ce personnage divin est en général interprété comme "intercesseur". En réalité, sa fonction spécifique est de protéger et de veiller sur la figure (humaine) qui l'accompagne: Blach, Green 1992: 115. Ce qui change dans le passage de l'âge post-akkadien à la période paléo-babylonienne, c'est sans aucun doute la façon de le contextualiser: dans un premier temps il conduit l'orant/le sujet par la main (il intercède donc auprès du dieu), dans un deuxième moment il le précède ou, fréquemment, il le suit.

lion, d'une cimenterre et parfois d'un arc (Ill. 2: 2),¹² Samas, ou Adad.¹³ Le personnage à la masse est aussi reproduit seul sur quelques plaques en terre-cuite et sur différents sceaux: ici il semble étranger au contexte principal qu'a, comme protagoniste, un autre souverain en train de remplir ses fonctions cultuelles.¹⁴ Enfin, cette figure royale apparaît dans les trois contextes indiqués ci-dessus mais sous un aspect légèrement différent: avec une tiare tronco-conique parfois striée et une petite queue triangulaire derrière la nuque.¹⁵

Le contexte spécifique

Dans le premier contexte examiné, qui est le plus fréquent dans tout le répertoire iconographique de l'art paléo-babylonien,¹⁶ le sujet occupe tout le champ figuratif, sans aucune scène subsidiaire.

Seule une légende, constituée par trois lignes d'inscription, occupe l'espace restant. Le formulaire est plutôt répétitif et ses variantes peuvent se résumer ainsi:

NP1 + DUMU NP2 + ÌR ND1

Nome Propre 1, Fils Nom Propre 2, Serviteur Nom de Divinité 1

ou bien

NP1 + DUMU NP2 + ÌR NR1

Nome Propre 1, Fils Nom Propre 2, Serviteur Nom Royal 1

L'interprétation

L'identification de ce personnage a été—et est encore actuellement—une question très débattue. Les positions scientifiques à ce sujet oscillent entre deux solutions: ou bien l'on reconnaît dans le personnage à la masse une figure divine, ou bien on y voit un souverain.

H. Frankfort compte parmi les défenseurs de la première hypothèse: il identifie cette figure comme le *God With the Mace* pour sa constante association avec la déesse tutélaire et, aussi, parce qu'il est quelquefois le destinataire d'une offrande animale.¹⁷ En termes généraux cette hypothèse a eu d'autres défenseurs: par exemple W.G. Lambert, qui a proposé d'identifier ce singulier personnage avec le dieu Ninsubur,¹⁸ ou encore M. Kelly-Buccellati, qui a émis l'hypothèse qu'il puisse s'agir d'un dieu, en l'espèce Amurru et/ou Ninsubur.¹⁹

Ces considérations, et en particulier les conclusions de M. Kelly-Buccellati, dérivent d'une conviction fondamentale: il doit exister une corrélation entre la divinité mentionnée dans l'inscription (c'est-à-dire celle du type NP1 + DUMU NP2 + ÌR ND1) et le personnage principal des sceaux en question. Le tableau suivant montre les résultats d'une recherche préliminaire au cours de laquelle j'ai examiné un échantillonnage d'environ 200 sceaux cylin-

12. Moorey and Gurney 1973: 74, Tav. 34: 10.

13. Collon 1986: 178, n. 460 (où les deux divinités sont représentées en séquence).

14. Lenzen 1963: tav. 30a; Parrot 1959: 150, Tav. 39: 828.

15. Par exemple dans Collon 1986: 118, Tav. 18: 222, 223; al Gailani-Werr 1988: nn. 190i, 208b, tav. XXVII: 1, 4.

16. Environ 650 documents figurés (sur un total de plus de 2800) illustrent cette scène spécifique.

17. Frankfort 1939: 168.

18. Lambert 1976: 14.

19. Kelly-Buccellati 1977: 49–50.

driques inscrits, et caractérisés par la seule figure du personnage à la masse et la déesse tutelaire.

Table 1: Liste des divinités nommées dans les inscriptions des cylindres-sceaux

Noms de divinités	attestées pour dévotion personnelle	déduites de la littérature religieuse
Amurru	47	3
Adad	35	6
ama	17	1
Nin_ubur	15	5
Nergal	14	0
Ea	11	1
Sin	10	0
Enlil	7	0
Nabium (Nabû)	6	2
Ninurta	2	0
Dagan	2	0
Marduk	1	0
autres	33	8
féminines	48	1

Dans la légende inscrite les noms divins apparaissent 1) dans la dernière colonne (selon la formule rapportée ci-dessus); 2) au début d'une courte phrase extraite vraisemblablement d'un poème ou d'une composition littéraire à sujet religieux.²⁰

Le tableau ci-dessus montre que les attestations du nom Amurru (50 en tout) et de Nin-subur (20) sont fréquentes, mais que le sont aussi celles d'autres divinités, comme Adad (41), Samas (18), et celles qui concernent des déesses—49 fois en tout—qui assurément ne peuvent pas être identifiées avec le personnage à la masse. On voit que le nom du dieu Amurru revient en tout 9 fois plus que Adad, bien que ce dernier soit plus souvent mentionné dans les textes à caractère religieux (6: 3). La fréquence des attestations des noms divins dans les légendes de sceaux est donc simplement le témoignage de la grande popularité dont jouissent ces divinités pendant la période paléo-babylonienne, en particulier Amurru et Adad, qui sont liés entre autres au phénomène de "l'amorréisation" de la Babylonie.

Récemment, F.A.M. Wiggermann a proposé d'identifier le souverain muni de la masse cérémonial avec l'esprit de *udug/sedu*, un dieu mineur, serviteur à la cour divine, qui exerce avec la déesse Lama une fonction apotropaïque en relation avec les seuils de porte. C'est précisément cette action protectrice, opérée en faveur du propriétaire du sceau, qui expliquerait leur fréquente représentation sur les sceaux de cette période.²¹

L'interprétation du personnage à la masse comme divinité me paraît difficile à soutenir car il ne présente aucun élément caractéristique de l'iconographie divine, comme la tiare à cornes, le *kaunakes* ou les emblèmes spécifiques. Il rappelle plutôt, dans l'ensemble, l'image

20. Barrelet 1987: 57.

21. Wiggermann 1985–6: 26.

du souverain: le couvre-chef qui remonte à l'époque de Gudea di Lagas, la masse cérémoniale²² et surtout le vêtement, qui est une réadaptation, en plus court, du manteau porté par le dieu auquel il rend hommage, comme on peut le voir par le drapé sur le bras gauche et la bordure latérale. L'identification du personnage à la masse avec souverain est aujourd'hui la thèse la plus accréditée, bien que le sens de cette représentation nous échappe souvent: D. Collon y reconnaît l'aspect de la royauté active (*active Kingship*),²³ M.-T. Barrelet y voit un archétype royal²⁴ et P. Matthiae interprète le couple formé par le personnage en question et la déesse Lama comme un groupe statuaire.²⁵

Considérations

Je présenterai maintenant quelques observations sur la nature de cette figure et sur le sens global de la scène dont il est le protagoniste.

1. Dans l'iconographie la plus courante, cette image du souverain fait face à la déesse Lama, une divinité mineure à la fonction d'intercesseur ou de protectrice. Comme figure intermédiaire entre l'humanité et la sphère divine, elle apparaît toujours dans les scènes d'audience à l'époque néo-sumérienne et au cours des premiers siècles du II^e millénaire av. J.C. Son attitude active de médiation s'exprime ou en tenant par la main le sujet appelé ou reçu à l'audience divine/royale ou, le plus souvent, en soulevant les bras en l'air. Ce geste reste identique dans les scènes que nous examinons ici, mais il y acquiert un sens totalement différent.

Ce n'est pas le personnage royal qui montre une attitude passive en présence de la déesse, c'est plutôt la déesse elle-même qui révèle une position subalterne quand elle soulève les bras en signe d'hommage devant le souverain. La figure royale ou pseudo-telle devient donc le but de l'action et le centre de la scène. Il faut également relever que le souverain effectue un geste singulier, et en partie obscur, avec sa main droite pas complètement fermée: l'index est tendu et dirigé vers le bas (cf. les Ill. précédentes).

On peut par conséquent supposer que l'index tendu fait allusion en général au geste de l'*ubana tarasu*, un geste qui est connu par les textes dès la période paléo-babylonienne mais qui d'un point de vue iconographique n'est attesté qu'à partir de l'époque néo-assyrienne²⁶ quand le souverain sera représenté avec l'index droit pointé en avant.²⁷

La symbolique de cette action est assez complexe: elle comporte des aspects religieux autant que politiques. Couramment effectué aussi par le souverain,²⁸ ce geste sert à établir une communication avec les dieux dont on attend une réponse ou une approbation pour ses actes. En termes généraux, cette action tend donc à exprimer une prise de position, une décision irrévocable; c'est une sorte de message tacite envoyé aux dieux par le souverain, par l'intermédiaire de sa déesse tutélaire.²⁹

Dans cette scène le roi manifeste par conséquent, peut-être oralement, ses intentions; il annonce vraisemblablement ses dispositions politiques et administratives et attend l'accord

22. Dans les rituels d'intronisation le sceptre est un attribut lié de façon spécifique à la personnalité royale, bien qu'il soit attribué par les dieux: Wilkinson 1986: 230.

23. Collon 1986: 101.

24. Barrelet 1987: 62.

25. Matthiae 1994: 56. Dans ce contexte spécifique le roi jouait le rôle de chef de l'armée. Selon cette reconstruction, la fonction de la déesse Lama devient moins claire.

26. Magen 1986: 45, 95–96.

divin. D'autre part, la déesse orante elle-même confère, peut-être par sa présence, l'approbation divine et confirme la ratification des décisions divines en soulevant les bras. La scène exprime donc la justesse des décisions royales, approuvées même par les dieux célestes, et la protection des actes du souverain.

L'histoire de la Mésopotamie, en particulier à l'époque paléo-babylonienne, est pleine de dispositions politiques et sociales et d'édits de rémission des dettes. Le soin particulier avec lequel le roi protège les classes les plus faibles et l'assurance divine que les actes du souverain sont justes doivent provoquer un sens de protection qui semble intrinsèque au thème décrit ici. C'est peut-être pour cette raison que les scènes secondaires et les motifs subsidiaires manquent, alors qu'ils sont si fréquents dans la glyptique paléo-babylonienne: animaux, objets, symboles se référant à un culte populaire presque inconnu mais qui ont vraisemblablement une valeur et un sens apotropaïques.

2. A ce point il faut s'interroger sur les motifs qui ont poussé les graveurs mésopotamiens à adopter de façon diffuse ce sujet figuratif exclusivement ou presque dans la glyptique, tandis que la statuaire officielle et le relief présentent l'iconographie canonique du souverain, assis sur son trône ou rendant hommage et/ou présentant un sacrifice à la divinité. Cela est peut-être dû à la diverse destination des œuvres monumentales dédiées et conservées surtout dans les sanctuaires citadins.

Différemment, il est possible que cette classe de cylindres-sceaux ait appartenu à d'importants personnages exerçant dans le secteur de l'administration palatine ou, plus en général, du royaume.³⁰ Cette hypothèse porte à supposer que le sujet en question ait la même fonction ou, au moins une fonction analogue, aux scènes d'audience de la période néo-sumérienne où les fonctionnaires de l'administration centrale reçoivent une investiture officielle de la part du souverain.

L'examen de la documentation globale relative à la fréquence des attestations des deux sujets figuratifs montre en effet une progressive mais évidente diminution du thème de l'audience devant le souverain et en même temps une croissance exponentielle de la scène de la figure royale en face de la déesse Lama.

27. Les rapports entre le répertoire figuratif de l'art de la période paléo-babylonienne et celui d'époque néo-assyrienne méritent d'être approfondis, en particulier en ce qui concerne le thème de la royauté. Certains indices font penser que la Babylonie a exercé à partir de l'époque paléo-babylonienne une énorme influence sur la culture assyrienne contemporaine (on pensera aux réalisations architecturales et artistiques de Samsi-Adad), provoquant la transmission de valeurs idéologiques et de modèles culturels dans les régions limitrophes. Divers aspects de ce phénomène ont été étudiés par Collon 1999: 22, mais il reste encore d'autres questions à traiter, comme l'apparition de la figure du roi chasseur dans l'art paléo-babylonien, figure qui trouve une vaste place dans les cycles épiques des reliefs néo-assyriens.

28. Par exemple dans les textes de Mari: Magen 1986: 96.

29. Ici, contrairement à ce qui a lieu à l'époque néo-assyrienne, quand l'index est normalement pointé en avant, le doigt est tendu mais dirigé vers le bas. La diverse interprétation de ce geste a peut-être le but d'éviter que l'action ait lieu à l'égard de la déesse Lama (contre elle?). Rappelons en effet que le geste de l'*ubana tarasu* peut aussi avoir une valeur négative quand il est effectué par un être humain à l'égard d'une divinité: Magen 1986: 95.

30. Cette hypothèse a été avancée en premier par Otto 1992: 159–171. Sans cet ouvrage, celle-ci examine en détail l'iconographie des sceaux des fonctionnaires de Samsi-Adad, en revanche, dans une plus récente contribution (Otto 2000) elle étudie la possibilité que cette classe de sceaux ait une fonction analogue au moins dans tous les royaumes de la Mésopotamie septentrionale.

Table 2: Situation documentaire à la période paléo-babylonienne archaïque/centrale

	Paléo-babylonienne archaïque (2025 ca.-1850 ca. a.C.)	Paléo-babylonienne centrale (1850 ca.-1700 ca. a.C.)
Audience du sujet devant le roi	300	88
personnage à la masse/déesse Lama	14	197

Le tableau ci-dessus révèle précisément une prépondérance initiale du thème de l'audience (encore une survivance de l'âge d'Ur III), adopté surtout dans le centre-sud (Isin et Larsa) et dans la région orientale de la Babylonie, alors que il est progressivement abandonné durant la phase suivante (dans le paléo-babylonien final il n'apparaît que quatre fois). Par contre, le souverain qui avance en face de la déesse tutélaire figure encore sur de rares documents du paléo-babylonien archaïque (surtout dans la région de Babylone-Sippar), tandis qu'il devient ensuite, en particulier sous les règnes d'Hammurabi (et de son contemporain Zimri-Lim) et de Samsu-iluna, l'un des sujets les plus fréquents de la glyptique, pour connaître, successivement, un déclin rapide à la fin de la période (pour le paléo-babylonien final on ne compte que six documents caractérisés par cette iconographie).

3. Il est possible de faire encore quelques autres observations en ce qui concerne l'identification du personnage muni de la masse cérémoniale, en particulier en ce qui concerne sa nature humaine et divine. Sur la base de la documentation prise en examen on doit observer que dans les scènes à caractère religieux cette figure suit souvent le souverain en habit rituel: est-ce un esprit-guide? un ancien prince à la fonction tutélaire? est-ce l'esprit même de la royauté?

L'association assez fréquente avec Ištar et surtout le fait s'empoigner un arc ou, parfois, une flèche, l'identifie comme personnage guerrier qu'on peut, pour les armes qu'il porte, être, reconduire à l'époque akkadienne ou néo-sumérienne.³¹ Il est également possible que cette iconographie renvoie, en réalité, à une antique oeuvre artistique (précisément de la période akkadienne ou de Ur III) qui devait illustrer un acte législatif particulier, économique ou social émané par un souverain à la forte personnalité et particulièrement "juste".

Je pense que ce prince prestigieux et équanime est un des rois de la III dynastie d'Ur dont les rois babyloniens se présentent—*expressis verbis*—comme les héritiers, en leur empruntant leur titulaire et leurs ambitions politiques.³²

Conclusions

Au XIX siècle av. J.C. on observe dans le répertoire de la glyptique la disparition progressive du thème de la présentation et la graduelle intensification de l'image du roi de justice face à la déesse Lama: Il s'agit là d'un motif politique qui doit, avec l'inscription, permettre d'identifier immédiatement les possesseurs des cylindres-sceaux comme d'importants personnages de l'administration de l'état, scribes ou prêtres.³³

31. À l'époque paléo-babylonienne, dans les scènes de guerre et dans le thème de l'idéalisation du triomphe, le souverain empoigne toujours le cimeterre de la main droite et, de la gauche, une masse tournoyante ou une lance.

32. Klein 1990: 65–136 étudie précisément la poursuite de l'emploi de la phraséologie des hymnes royaux néo-sumériens encore au début de l'époque paléo-babylonienne.

33. En réalité, à Mari et dans les royaumes de la Mésopotamie du Nord, cette fonction semble certaine, alors qu'elle n'est pas généralisée dans la Babylonie méridionale: cela signifie-t-il que elle n'a acquis pleinement cette valeur, héritée ensuite par les royaumes méridionaux, que dans la région septentrionale de la Mésopotamie?

Il est curieux que ce thème si caractéristique disparaisse avec la chute de la I^{ère} dynastie de Babylone, même si quelques cylindres-sceaux continuent encore à circuler, mais avec des transformations significatives.

La constante référence visuelle des fonctionnaires palatons est le souverain, qui apparaît muni de ses attributs royaux, comme le sceptre, dans une fonction plus politique que militaire, bien que le modèle iconographique provienne d'autres contextes et que la limite entre le roi qui s'occupe de l'administration du pays de manière attentive et impartiale et le roi juste qui combat l'ennemi au nom des dieux soit plutôt fragile.

Il se produit donc une diversification des rôles qui engendre une multiplication des images royales; toutefois, celles-ci, même dans les variations iconographiques, rappellent constamment le rapport privilégié entre le souverain et le monde divin. C'est en effet pour les dieux et grâce à eux que le roi gouverne, que la justice sociale se réalise, que l'on promulgue les lois et qu'est sauvegardé l'ordre naturel des choses.

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Style and Prestige in the Early Dynastic Society

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Abstract

During the Early Dynastic period the growth of city states has created a rich variety in styles applied to the material goods of private and public, religious and political communication. Style often elucidates the political and economic position of the city states within the Mesopotamian interrelational system. Especially in the ED III period it marks the degree of social integration or disintegration within the city states. Style had become an important means of acquiring social prestige.

The archeological record allows a comparative view on the uses of style in the southern Mesopotamian cities, like Ur, Šuruppak, Lagaš, and in their northern counterparts, like Mari and Ebla. At a certain moment of their history all of them show a distinct tendency towards a highly developed style which contradicts with a less elaborated style, thus pointing to the different perception of individual and communal status. In the question of art, it follows that style becomes most refined and distinguishable when connected with the competition for social prestige.

The concept of style has many perspectives. Nowadays new approaches in archaeology inquire its role in the cultural system instead of taking style as a self evident concept upon which definitions of archaeological cultures often have been based.¹ But once artifacts are recognized in terms of their stylistic patterns these patterns can be said to reflect certain socio-cultural phenomena.

In this paper I would like to deal with one of these phenomena, that is the role of style in conveying prestige during the late ED period, and vice versa the impact of prestigious behaviours on the appearance or disappearance of stylistic patterns. Thus I will argue for style as a social phenomenon. The limited space available for this paper allows only for a general idea of the methodological approach to explain style in a cultural system. For the whole project much more data are to be considered than it is possible to present here. Therefore I will only refer to a few examples in the field of visual arts from Šuruppak, Ur, Lagaš and Ebla.

The first example, Šuruppak, the modern Fara, illustrates the stage in the evolution of style when its use is tied to egalitarian economic principles rather than to social distinctions. During the Jemdet Nasr and Early Dynastic I periods Fara was one of the five largest settlements, measuring 70 ha., in the Warka area (Adams 1981: Figs. 18, 21), surveyed by Robert McC. Adams and Hans Nissen in the seventies of the 20th century. In the ED II, when settlement patterns all over Sumer underwent a marked change, Fara became only one of ten

1. For new approaches to the investigation of style in archaeology see the contributions in Conkey and Hastorf 1990.

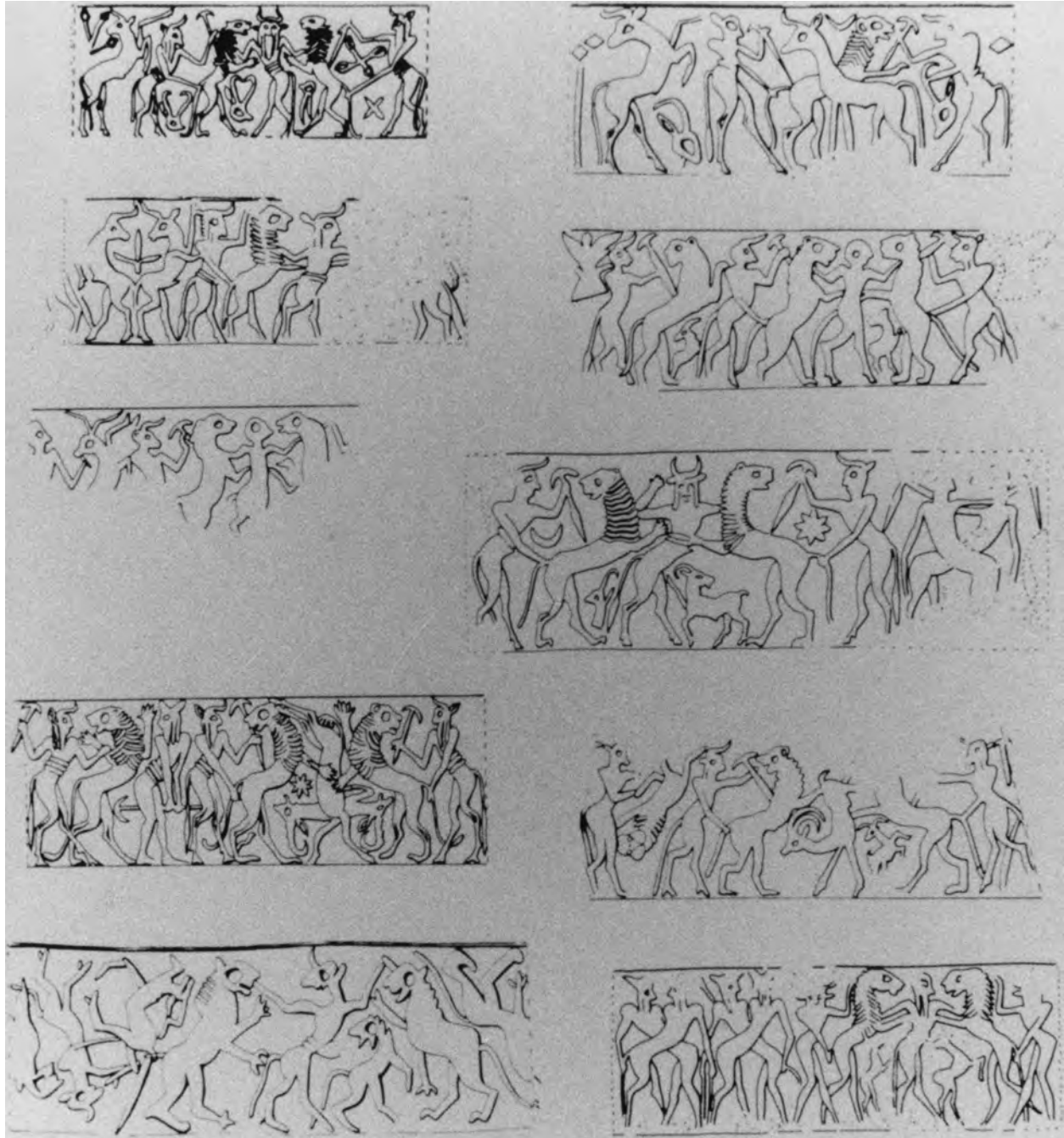


FIGURE 1. Early ED II seals, “Elegant Style”, from Fara, Martin 1988: 249.

sites with an area exceeding 50 ha. in the region (Adams 1981: Fig. 30). In the same time the number of villages in the hinterland of Fara had diminished drastically. A further reduction in power is seen from the fact that both waterway and population centers were now concentrated east of the Euphrates. In this sphere of reduced political control and economic potentials fits the picture of an egalitarian glyptic style.

Fara has the largest number of ED II seals and sealings found in Mesopotamia. They form a homogeneous corpus, very distinctive because of the standard composition principle, which organizes the scene in three, four or mostly five figure symmetrical groups (Fig. 1).

Harriet Martin (1988: 73) calls it the “Elegant Style” in opposition to the established designations Fara or Mesilim style. These seals are not found in other sites, I would thus like to support Martin (1988: 75) in questioning the often repeated statement that Fara or Mesilim style was standard throughout Mesopotamia. Only towards the end of the ED II, when seal composition tended towards uniting small scenes into one, described as “Crossed Style”, some parallels to glyptic finds in Kis and in the Diyala region can be drawn (Martin 1988: 74, nos. 362–416).

The fact is that the ED II seals of Fara are neither an indication of external relationships nor of social differentiations. Instead their use was connected with the internal economic organization, which, according to the ED IIIa tablets, was based on several household units, organisations which administered the economy of private estates (Martin 1988: 127). The institutionalized style of the seals served to facilitate the communication between the household units on the same level, while indicating the authority of their officials (GAR-ensi/ensi-gal) but not mediating their social prestige.

Nevertheless the growth of economic wealth, especially during ED III, must have supported the emergence of elite groups with individual demands for expressing their social prestige. But there is no evidence that they developed visual arts for that purpose. In contrast one of the most recent results, gained from the edition of the Fara tablets in the Istanbul collection by Horst Steible, points to another perception of prestige. In Šuruppak a considerable number of important individuals received large amounts of lapis lazuli in raw material.² In this case prestige would have been recognized by its material symbolism.³

Focusing on my main argument about the concept of style in the late ED I will turn the attention of the reader to the ‘Royal Cemetery’ at Ur. There we find the strongest evidence for the stylistic versus the material component of prestige.

Concerning the lack of anthropological data from the excavation of the Ur Cemetery it is difficult to decide if a certain grave good belong to a male or a female corpse. But in the case of the seals buried within the graves of the early ED III period, the general impression is, confirmed by other artifacts and/or inscriptions accompanying the dead, that seals with a combat scene belong to men while seals with a banquet scene belong to women. Moreover there is a difference in material: combat scene seals are made of a white material, either shell or chalcite, whereas banquet scenes are more often rendered in lapis lazuli.⁴

2. Tablets Š 742 and Š 745 published by Steible and Yıldız 2001. The lapis lazuli is weighed in *gu*₂ “talent”. In Š 745 every person receives 1 talent, that means 60 kg of lapis lazuli.

3. For the material properties of lapis lazuli see Winter 1999.

4. This observation is based on the evidence of the corpus of banquet scene seals which are grouped stylistically and stratigraphically around the seal of Puabi (U.10939) and the contemporary group of seals with combat scene executed in the Meskalamdug style (see also Nissen 1966: 60). Seals made of lapis lazuli and engraved with the banquet scene only are U. 8119 from PG. 156, U.8615 from PG 337, U.10823 from PG 789, U.10939, U.10871, U.10872 (seals of Puabi) and U.10448A (seal of A-báragé) from PG 800, U.11774 from PG 1130, U.11871 from PG 1163, U. 12374 (seal of Dumu-kisal), U.12387 and U.12427 from PG 1237 (“Great Death Pit”), U.12258 from PG 1315 and U.14319 from PG 1750. The seals from PG 789, PG 800, PG 1130, PG 1237 and PG 1315 apparently belong to women. For the seals from the other graves no indications of the sex of the buried person(s) are available.

Combat scene seals made of shell or chalcite are U.7992 from PG 43, U.8141 from PG 160, U.8513 from PG 261 (seal of Lugal-anzu^{mušen}), U.9943 from PG 743 (seal of Šara-bar-a), U.11174 (seal of E-zi-da) and U.11175 from PG 779, U.10530 from PG 800 (seal of Lugal-ša-pà-da), U.11528 and U.11751 (seal of Meskalamdug) from PG 1054, U.12461 from PG 1236 (seal



FIGURE 2. Seal of A-bára-ge from PG 800 at Ur, Pennsylvania Univ. Museum (B16727), Zettler and Horn 1998: No. 18.

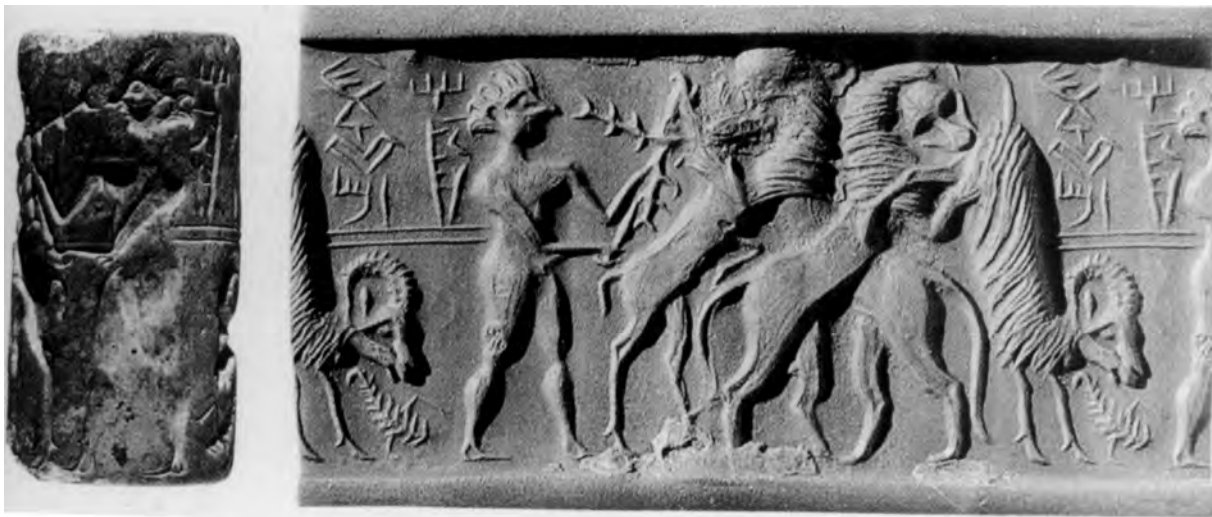


FIGURE 3. Seal of Lugal-sà-pà-da from PG 800 at Ur, Pennsylvania Univ. Museum (B16747), Zettler and Horn 1998: No. 21.

Clear evidence for that is provided by the grave PG 800 of Puabi (Woolley 1934: pl. 36). Three lapis lazuli seals with banquet scene belonged to Puabi, found in the tomb-chamber near the right arm of her body (Woolley 1934: pl. 193, nos. 16–18); a fourth one (Fig. 2) was found in the death-pit floor, against the end of the wardrobe box. It might be ascribed to one of Puabi's ladies-in-waiting, named A-bára-ge. The fifth seal depicts a combat scene and is made of shell (Fig. 3). It belonged to one of the grooms (body no. 18) who were in charge of the chariot. The male owner of the seal is confirmed by the inscription which names Lugal-sà-pà-da.

of Ša-^dgig-[u-^dim?]), U.14013 from PG 1627 and U.14327 from PG 1753. In no case a female owner for one of these seals can be proposed. The seal U.12457 from PG 1236 is made of gold, that of Akalamdug (U.11825) from PG 1050 is made of lapis lazuli. This seal could rather belong to his wife who is mentioned in the inscription. Only later within the time of the I. Dynastie of Ur lapis lazuli became a common material for seals with combat scene, cf. U.11554 from PG 1068, U.12674 from PG 1382, U.127046 from PG 1403 and U.12707E from PG 1407, all executed in the Lugalanda style. This shift in the material value of seals with combat scene already points to a different perception of prestige at the end of the ED III period (see the following discussion of this phenomenon).



FIGURE 4. Seal of Šara-bar-a from PG 743 at Ur, Baghdad Iraq Museum (IM 14315), Woolley 1934: Pl 197, no. 57.

Furthermore there is a third very important difference: The stylistic manner in which the two scenes are carved (compare Figs. 2 and 3)—the crude linear style of the banquet scene in contrast to the modelled style of the combat scene, and also the opposition of a static against a dynamic composition. In this case, style is definitely not the result of two spatially and/or temporally separated cultural units. Instead it is the result of two different levels of communication within one single context. In the grave context the purpose of both seal groups is to mediate prestige. One uses the material symbolism while the other that of style.

The distinction of stylistic and material values was certainly connected with the function of both seal groups. In Ur, seals with combat scenes were used for sealings⁵, thus, the visual effect of the scene stands in close relation to its wider sphere of communication. In contrast, sealings with banquet scenes are not found. We may suggest that they were worn individually as prestigious objects, as it is depicted on contemporary female inlaid figures from Mari (Dolce 1978: Pl. 39, M 300–302, Pl. 41, M 307). In this case the private sphere of influence of the seal resulted in the emphasis on its material value.

The question arises, why style was such a strong argument for prestige in the case of the combat scene. The answer should be related to the competition of social prestige, because of which one prestigious group referred especially to style as a difficult accessible good for other groups. Since the ED I the most traditional scene connected with the functions and status of the elite groups was the combat scene. No thematic alternative existed for members of this seal using class to underline their position in the social hierarchy. But within the time of the ED III, when more individuals gained access to symbols of prestige, they elaborated style to maintain different levels of prestige. This becomes clear by comparing for example the seal of the servant in the grave of Pu'abi (Fig. 3) with a seal from the private grave PG 743 (Fig. 4), the owner of which is called "Šara-bar-a, the scribe of the queen", and furthermore with the seal of Meskalamdug from PG 1054 (Fig. 5). Here it seems that the degree of stylistic elaboration corresponds with the hierarchical order of the seal owners. But they belonged to the same male elite class grouped around the royal court in Ur. Thus the competition between different levels of prestige is clearly mirrored by the competition of style.

5. A well known example is that of the Mesannepada seal impressed on a clay sealing found in Seal Impression Strata 1–2 (U.13607. Woolley 1934: Pl. 207, no. 214)

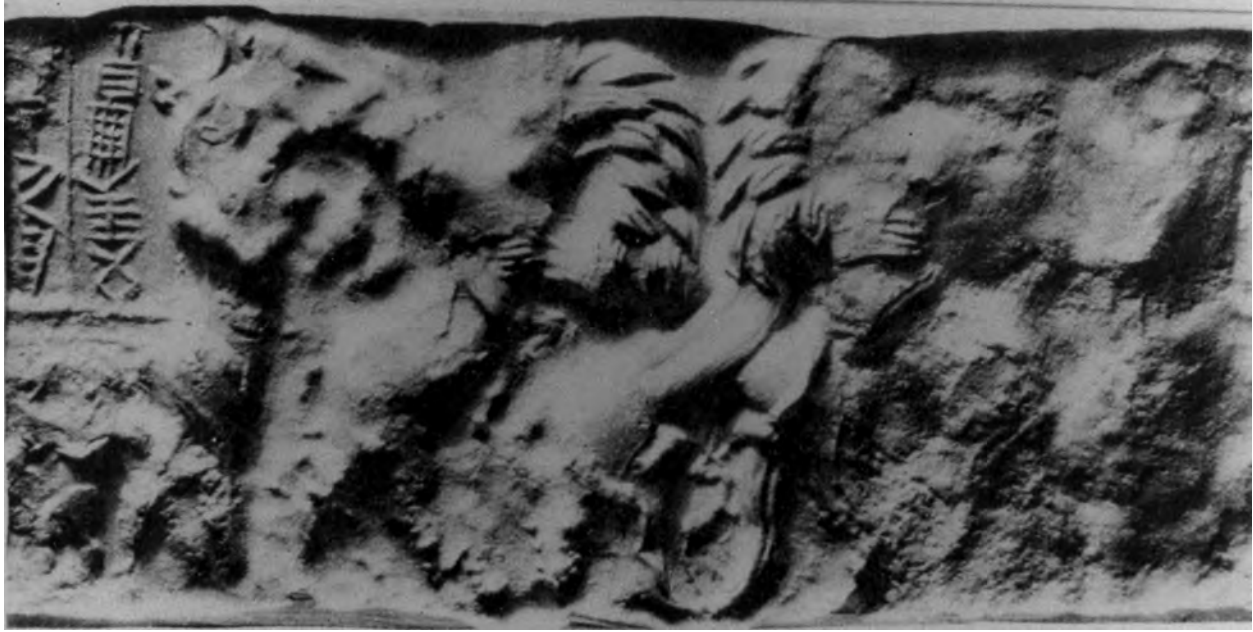


FIGURE 5. Seal of Meskalamdug from PG 1054 at Ur, British Museum (BM 122536), Woolley 1934: Pl. 196, no 55.

To keep the upper class distant from other groups, let us say the female elite class of Ur, style was maintained as the most exclusive domain of prestige, because—according to me—it was the most energetic aspect of prestige.⁶ The production of combat scene seals demanded highly specialized seal cutters who were not available for other classes. Therefore these classes were forced to search for other possibilities to emulate prestige. This statement becomes clearer if we consider the stylistic as well as formalistic changes in the production of the seals during the late ED III period. In this time the female elite gradually acquired or rather copied prestigious symbols of the male class. The first step was the combination of banquet and combat scenes on double-register cylinder seals, still made of lapis lazuli. One example for this kind of seals (Fig. 6) belonged to a female corpse (body no. 61) in the “Great Death Pit” (PG 1237). Later the combat scene was depicted on both registers, as in the case of the Nin-banda seal (Fig. 7). This development indicates that the combat scene had lost its importance as privilege of the male elite class. But to defend this scene for emulation its traditional users still developed more elaborate forms of style, as exemplified by the free standing and individually modeled figures on the seal of Mesannepada,⁷ which had given name to the whole stylistic group.

Surely, the more style is developed in a stipulated thematic frame the less variations are possible. In response to the emulation or redundancy of style high ranking people look for alternative forms to convey their prestige. Thus, in societies with more than one prestigious group there is often a progressive interchange between style and other symbols to convey prestige.

6. Compare Susan Pollock (1983) in her profound analysis of the “symbolism of prestige” in the Ur cemetery. She proposes that “goods that symbolize varying degrees of prestige may be identified by distinctions in material, style, size and abundance, and, most commonly, by a combination of these attributes” (Pollock 1983: 271).

7. See above, n. 5.

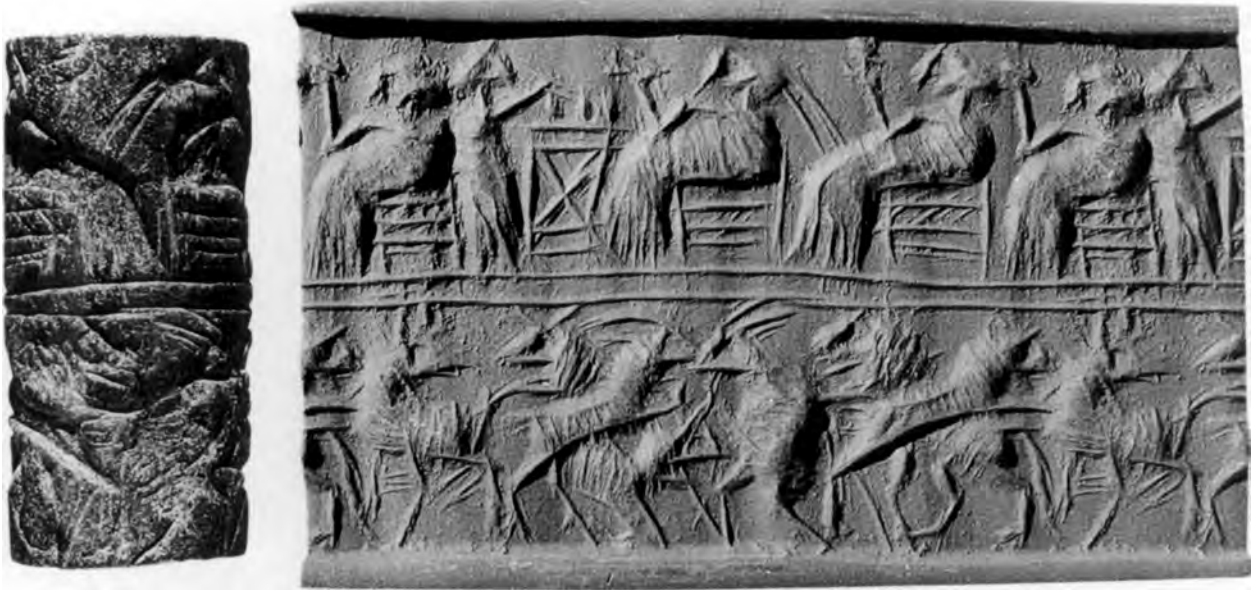


FIGURE 6. Seal from the “Great Death Pit” PG 1237 at Ur, Pennsylvania Univ. Museum (30–12–3), Zettler and Horn 1998: No. 27.

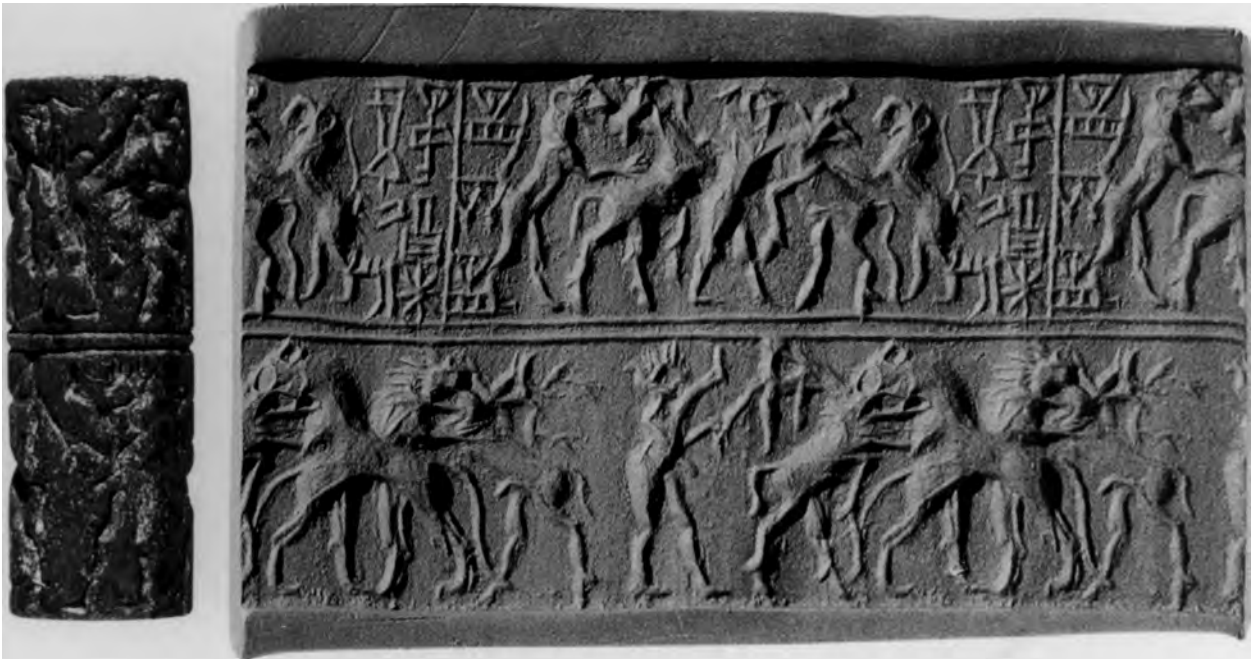


FIGURE 7. Seal of Nin-bànda from the cemetery at Ur (without grave context), Pennsylvania Univ. Museum (B16852), Zettler and Horn 1998: No. 25.

To demonstrate this statement it is sufficient to point out some of the best known sculptures of the First Dynasty of Lagaš. We do not know statues representing the first ruler of this Dynasty, Urnanše, but we can imagine that it would not have been easy for him to surpass in style contemporary images, like that of Dudu the “Scribe” (Fig. 8). The statuette of Dudu is certainly one of the finest sculptural compositions which stands in the long tradition of ED votive statues. Instead of beating this tradition, to which several high ranking



FIGURE 8. Statue of Dudu, “the scribe”, from the region of Lagaš, h. 39 cm, Baghdad Iraq Museum (IM 55204), Orthmann 1975: Fig. 29.



FIGURE 9. Votive plaque of Urnanše, Ensi of Lagaš, h. 40 cm, Louvre (AO 2344), Strommenger 1962: Fig. 73.



FIGURE 10. Votive plaque of Enannatum (I. or II.), Ensi of Lagaš, h. 18.6 cm, British Museum (BM 23287), Orthmann 1975: Fig. 87b.

members of the ED society referred with their own statues, Urnanše had chosen new subjects in visual art to demonstrate his outstanding position and to legitimize his new concept of rule. That is the votive plaque with the family scene proclaiming the new dynastic principle of succession (Fig. 9). In contrast to the innovative iconography this relief is stylistically still a static and flat composition, not comparable to the vivid image of Dudu. Thus the contrast between a relief and a sculpture in the round is mirrored in a different perception of style. Nevertheless, almost three generations later the style of the votive plaques became more sophisticated, as for example in the relief of Enannatum (Fig. 10). The easily distinguishable style of the relief is not only the result of the artistic experience with the subject



FIGURE 11. Votive mace of a high official from Girsu dedicated for the live of Enannatum (I. or II.), h. 12,7 cm, British Museum (BM 23287), Orthmann 1975: Fig. 86b.



FIGURE 12. Statue of Meanesi, son of Enannatum I. of Lagaš, h. 24 cm, Baghdad Iraq Museum (IM 51145), Strommenger 1962: Fig 101.

but also a result of competition in a broader social milieu, because in the meantime other members of the upper class in Lagaš had adopted the votive relief for their own use (Fig. 11).

Thus we see, again, the leaders of the ruling class in Lagaš engaged in defending their proper prestige from emulation. Meanesi, son of Enannatum I, executed a votive statuette for himself (Fig. 12), which is one of the latest and finest examples of this genre because of the strong physical qualities of its shoulders and back as well as the five rows of sculptured fringes of the skirt. Meanesi's younger brother Entemena, who became the successor to the throne in Lagaš, made necessary the effort to beat the image of his brother. Looking on the stylistic appearance of his own statue (Fig. 13) one notices rather a decline than a progress in style, in so far as the body remains rooted in the stone block, shoulders and back are not modelled and the fringes are flat. But nevertheless it was certainly valued as more prestigious than that of Meanesi, because it is bigger, its robe has seven instead of five rows of fringes, and most important, it is made from diorite, the royal stone par excellence which only from that period on had been imported from the Gulf region to Lagaš.⁸ In this case the meaning of style has been substituted by the affective properties of quantity and material

8. The surface of the black diorite reflects the light. Thus it was one of the precious stones, like lapis lazuli and haematite, which in spite of their darkness were coded positively. For the aesthetic quality of radiant light connected with prestigious objects see Irene Winter in her contribution to the ZICANE and earlier Winter 1995: 2573.



FIGURE 13. Statue of Entemena of Lagaš, found at Ur, h. 67 cm, Baghdad Iraq Museum (IM 5), Braun-Holzinger 1977: Pl. 27d.



FIGURE 14. Statuette of veiled woman from Ebla, Palace G, h. 5.3 cm (TM.83.G.400), Matthiae et al. 1995: Cat.no. 95.



FIGURE 15. Statuette of human headed bull from Ebla, Palace G, h. 4.0 cm (TM.76.G.850), Matthiae et al. 1995: Cat.no. 121.

which now were considered as stronger arguments for prestige than the stylistic elaboration.

To conclude from this short overview, it seems that style in the ED was a very tangible phenomenon, which touches upon the sphere of tradition and competition, but which strikes when changes and innovations take place.

The last place, which I would like to consider here, is Ebla. At the end of the ED, in Syrian chronology the EB IV A and B, the palace complex (SA.ZA^{ki}) of Ebla constituted the context of a stratified elite class.⁹ On the top stood the king (*malikum*) who was surrounded with a group of 40 elders (*abba*). The administration of the palace was in charge of 20 “signors” (eblaite *ba’lum*, sumerian *lugal*), one of which later achieved the status of a vice regent. Arrukum and Ibrium are well known names in this extraordinary position. Together with their families these individuals formed a quite extensive group among which the circulation of prestigious goods was an important act to confirm the social status in the palace system. Furthermore the distribution of prestigious goods continued in the next lower class of the palace employees, between 500 and 800 persons who worked as priests, attendants, cooking personal, workmen.

The first evidence for the reciprocal system of recognition and assignment of social prestige comes from the palace archive where both were registered, the big amount of precious metals which came as donations in the palace as well as the smaller amount of them which was redistributed among the members and clients of the palace complex.

The second evidence comes from the many archaeological finds in the palace area which indicate that the members of the palace complex used the combination of material and style in order to determine or even to enlarge their social position in the palace system.

Many fragments and few well preserved examples of composite figures demonstrate the range of stylistic patterns in combination with different precious materials: For example the different types of fringed garments made of shell, white and greyish calcite (Matthiae et al. 1995: pls. on p.337), and the statuette of a veiled woman as example of the aesthetic effect of a composite figure (Fig. 14). Animal figures also show the coherence between high material values and stylistic qualities (Fig. 15).¹⁰ In some cases the parallels to the figurative art from the Ur cemetery are striking,¹¹ what has to be considered not only as an indication of contacts between Ur and Ebla but also as an indication of art production in similar social contexts. It should be remembered that these are all items of miniature art, not larger than 5–6 cm. Thus they have been ideal artifacts to circulate among prestigious ingroups.

In contrast to this convincing example according to which an elaborated and differentiated style is connected with the prestigious claims of its users, there is another example in the performance of visual art in Ebla according to which style is less important. The inlaid works of Ebla mostly render scenes of victory and booty (Fig. 16). As it was a central subject for the visual propaganda of the palace there was no competition around this subject and no need to highlight it with more energy put into style. The clearly ideological message of these scenes result in a distinct iconography for which style is rather redundant.

Last but not least there is the glyptic evidence from the palace. Here the picture is diverse. It points again to the different levels of communication in which stylistic patterns, to a larger or lesser degree, cooperate. On one side big jars containing goods for the subsistence of Ebla were supplied with seal impressions over the rim (Fig. 17). The depiction of pastoral

9. For a comprehensive view of the social and administrative organization of Ebla in the ED III see Archi 1993 and 1995.

10. See also the statuettes and inlaid figures of a sheep, gazelle, leopard and lion (Matthiae et al. 1995: Cat.nos. 106, 110, 111, 113).

11. This is the case of the sheep statuette cited above (n. 10) of which a close parallel can be drawn to a statuette of same size and material from the ED cemetery of Ur (U.8033. Woolley 1934: Pl. 142). In Ur the animal represented is a cow but the stylistic rendering and the kneeling position with one bended leg is exactly the same as for the sheep figure in Ebla.



FIGURE 16. Inlaid figures, warriors carrying booty and head trophies, from Ebla, Palace G, h.13.1–13.7 cm (TM.88.G.256+257, TM.88.G.165, TM.88.G.289+290), Matthiae et al. 1995: Cat.nos. 26–28.

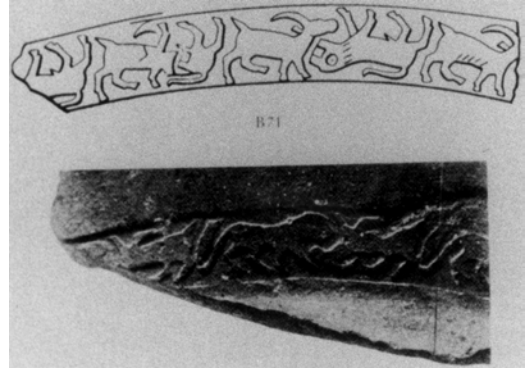


FIGURE 17. Seal impressions on storage jars from Ebla, Mazzoni 1992: Pl. 30.



FIGURE 18. Seal impressions on clay sealings from Ebla, Palace G (TM.75.G.590, TM.75.G.588), Matthiae et al. 1995: Cat.nos. 229 and 222.

scenes served to support the communication within the regional economic system (see Mazzoni 1992: 178–195). The motifs must have remained easily recognizable and so they stand in the conservative Syrian glyptic tradition which dates back to the Late Uruk period. On the other side a so called palatine style was used to seal smaller sized containers for various goods which circulated in the wide-ranging exchange system of the palace (Fig. 18). The iconography of the combat scene and the stylistic features such as the free standing figures in their strong upright position, and the intertwined motifs are free renderings of the ED III B styles of southern Mesopotamia, found in sites like Lagaš and Ur.¹²

With the adaptation of a new style the institutions and their representatives in Ebla demonstrated their participation in a wider communication system and they proved their abilities to acquire innovative forms for mediating status and prestige.

To conclude I would like to emphasize the social dimension of prestige when it is attached to style. One may argue, contrarily, that this statement would count for all places where style is involved in the communication system of a society—for example in the following Akkad

12. Compare with the seals of the 'royal style' from Lagaš and of the Mesannepada style from Ur, all illustrated in Hansen 1987: Pls. 14 and 15.

period. But I believe that in the Akkadian context the highly artificially articulated style emerged in response to its official use. Style in the Akkad period is not a social phenomenon because it was not related to the symbolism of prestige. In this period style became a focus of propaganda to eliminate and to standardize prestigious behaviors of individuals. That's why Akkad style has its overall recognizable characteristics. By contrast the rich variety of styles in the late Early Dynastic period emerged from a competitive society. Competition took place in the political, economic and social sphere of the city states. Between these spheres style became an important means for reputation and distinction of individuals. Thus, the elaboration of style arises from the competition of social prestige.

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Nimrud-Kalakh and Ancestor Worship

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The most famous relief from the Neo-Assyrian time was found in the ruins of the palace built by Ashur-nassir-apli II at Nimrud-Kalakh. It stood behind the throne and represents in the centre a holy tree with a god above it and on both sides a royal person rising the left hand with the pointing second finger towards the god. Behind each king stands a human-figured demon with wings spending fertility to the king before him. Since its discovery this scene is explained as showing two times Ashur-nassir-apli himself—and both were declared as being identical. It is a strange case of misunderstanding. The two figures are neither identical in their posture—look to their arms—nor in their jewellery—the bracelet on the left side is not shown on the right one—and the details of the caps and the fringes of their dresses are also different as mentioned by Mrs. Collon in a letter to me. I question at all the sense why the ruling king should be represented behind the throne when he will sit there himself. Should he greet himself? No, I propose to interpret the scene in analogy to the standard inscription running horizontally over the reliefs, I quote:

“The palace of Ashur-nassir-apli, vice-regent chosen of the gods Enlil and Ninurta, beloved of the gods An and Dagan, destructive weapon of the great gods, strong king, king of universe, king of Assyria, son of Tukulti-Ninurta (II), great king, strong king, king of universe, king of Assyria, son of Adad nerari (II), also great king, strong king, king of universe, king of Assyria” etc. The ruling king quotes his father and his grandfather as witnesses of his kingship—and the pictures behind the throne do the same, giving evidence of the legality of the rule of king Ashur-nassir-apli. The complete picture gave three kings in front of the hall—the sitting ruler, accompanied by his ancestors. That makes real sense, but has some further consequences. The same scene reappears opposite to the main gate of the hall, so that it could be seen from the court when the door was opened. This version made the scene into a real icon framed and separated from the other pictures besides it. There appears again two kings in different postures and followed by officers holding their arms in various ways—they were not identical, too. Should that be Ashur-nassir-apli again? No, this man was not mad, but followed a certain concept, a program of decoration of the whole palace which should be understood by the place of Nimrud in Assyrian history. While the left wing of the throne room was dominated by religious demonstrations the right wing represented the power of this ruler.

But what about the tree and the god behind the throne in face of the great number of such trees without a god flying over them? The combination is clearly bound to the living ruler and the trees without? The deceased ancestors? The representation of father and grandfather were explained as ancestors confirming the royal power of the king—and the other filling the walls of several rooms in the palace?

The palace at Nimrud was a substitute for the traditional centre of Assyrian royal power—Assur—where the older kings were buried and where their supernatural power was effective. The new center had to be given such spiritual power by representing the supernatural force of the ancestors as trees strengthened by the demons stimulating them. That brings us to the next detail; the demons were always clearly separated by the forms of their heads – human—like and birds’ heads. That should have importance?

What is the meaning of the eagle?—a bird-headed demon reappearing in such scenes on royal seals of the time of Ashur-nassir-apli, as on the seal of Musezib-Ninurta mentioning also father and grandfather of the owner, without the diadem of kingship for being a shanga priest but of royal offspring at Shadikanni, and there are other monuments with such scenes, too.

But let us follow the royal Assyrian line. The motive reappears as a painting on glazed bricks from a gateway into the “Fort Shalmaneser” in Nimrud built by Shulmana-ashared, the son and successor of Ashur-nassir-apli. The elements of the motive are arranged in a somewhat different manner. The two kings stand face to face, again in various postures and dresses. The god flies over them. The tree stands above an inscription praising the living ruler, his father and grandfather. New are two bulls at the tree and the five decorative strips in an arch-like order and also the rosettes, the pomegranate, the twisted band, and the unqlates bowing the knee towards a bush. Does the “Fort Shalmaneser” give a positive proof for ancestor worship—the decoration at Dur-Sharrukin offers the negative proof. The palace K at Dur-Sharrukin contained a fragment of a representative wall painting set into a door-like frame like the one from the fort. But it lacks the royal ancestors, the holy tree and the demons with birds’ heads. It seems to be a copy of the royal representation from the throne room in the royal palace. There the two sites where we found the royal icons at Nimrud had blank blocks but fragments in the debris were parts of glazed brick paintings which might have shown the original of the wall painting of palace K.

It had the same main form of an arch like the “Fort Shalmaneser” but the main picture is completely different—there is no tree, no bird-headed demon and not a pair of kings. One person stands on a flat base, two others before him. The dresses were not preserved in a recognizable state of preservation. They do not present the ancestors—and the interpretation of a king with his crown prince honouring the god may be correct. Sargon as usurpator could not boast with royal progenitors. It seems that he expressed his kingship as a gift by god, but why he omitted the tree and the bird-headed demon? The tree as the power of a deceased king would fit, and the bird-headed demon? It is standing in Nimrud Kalakh on the same level as the human-headed demon besides the holy tree. Do they represent two lines of ancestors male and female? I have no idea, how to test this thesis.

But to the last item—there is one relief with Ashur-nassir-apli in an unusual dress. His breast plate repeats the scene with the royal ancestors—and the decoration of his dress as well as the one of the officer behind him shows the same scenes as the reliefs around demons before the tree or the king in ritual action. I propose we take this dress as a ritual one used in dynastic ancestral cult.

The interrelation of the concept of the kingship, the ailed sun, and the sacred tree during the time of Assur-nassir-apli and his son reappears in the decoration of some Assyrian hel-

mets of their time (Born and Seidl 1995). One of them shows the coronation of Salmanassar by Ishtar and Assur (Born and Seidl 1995: Fig. 1–5). The king between the gods stands below the sun disc with wings which cannot represent Assur standing before the king. It could be a representation of the spiritual guard of the reigning king like the brightness of charm in the Iranian tradition.

Another helmet in the collection of Giancarlo Ligabue has the two kings besides the tree with the winged disc as in the throneroom (Born and Seidl 1995: Fig. 40) and a third one has instead of the tree a triangle, which may be the representation of the country (Born and Seidl 1995: 39).

We do not have the complete program of relief decoration and are not able to reconstruct the original plan of the palace but I am sure that Ashur-nassir-apli tried to transfer the inherited spiritual power of his ancestors to the new residence and to represent himself as the born legitimate king proved by his father and grandfather.

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A 'New' Near Eastern Bronze from Olympia

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The fragmented remains of at least thirteen registers of repoussé hammered bronze frieze, of unmistakably Near Eastern workmanship, was excavated from Brunnen 17 near the stadium of the Sanctuary of Zeus at Olympia in February 1960.¹ The reconstructed height of this set of bronzes is at least one meter. When it was found it was fragmented into some 78 small pieces. It was excavated from the same find spot as 110 fragments of bronze incised with Greek Orientalizing motifs and a large number of bronzes from still other artifacts. Simply sorting these fragments into several related groups was an enormous task. Reconstructing the two major sets, Near Eastern and Greek Orientalizing, was a task demanding a vast amount of patience and persistence. Determining the nature of their use at Olympia took a leap of imagination, and a tedious search for confirming evidence. Two German scholars, Brigitte Borell and Dessa Rittig undertook the reconstruction and original publication of this material. They pursued these tasks for nearly twenty years. They proposed persuasively that the Greek Orientalizing fragments derived from melted down and reused Near Eastern bronze from the same smelting operation that created the surviving Near Eastern repousse bronze, and both sets of fragments were used together to fabricate three sphyratōn kore statues. The archaic Greek statues resulting suggest a date of manufacture no earlier than ca. 610 B.C. and probably no later than ca. 580 B.C. the pottery closing Brunnen 17 suggests a terminal date for the use of this repository for sanctuary votives of ca. 570 B.C. The purpose of this paper is to consider the available evidence for some reasonable suggestions regarding where the Near Eastern bronze was fabricated, the original purpose for which it was made, a possible date of manufacture, and a date for when it became scrap.

The separately made Near Eastern friezes retain many original large rivet holes and some large round and square headed Near Eastern rivets which originally fastened the friezes to one another in a particular order. For their final use at Olympia the friezes were cut and fastened into new arrangements with small rivets in small rivet holes² (Fig. 8). Some of the Greek rivets fastened together both Near Eastern friezes and Greek Orientalizing incised bronze.³ In addition, in the same cache were found fragments of two bronze repousse hammered heads with hammered and incised hair, and remains of a repoussé hand and arm with an incised bracelet.⁴ A sheet of bronze attached to the largest imported piece was crafted into what appeared to be the original arc-shaped hem of a pleated skirt.⁵ Thus,

1. Borell and Rittig 1998: Taf. 1–6, 32, and 45.
2. Borell and Rittig 1998: Taf. 1–3, 5, 6, 8–9, 12, and 14–17.
3. Borell and Rittig 1998: Taf. 5, 23, 28 and 45.
4. Borell and Rittig 1998: Taf. 25, 48–52.
5. Borell and Rittig 1998: Taf. 45, 53.1, and 63.

the best-preserved fragments may be interpreted as representing the sphyrelaton bronze sheath for a life-size kore figure.⁶ The more fragmentary bronzes, both incised and repousse worked, may be interpreted as remains of sphyrelaton sheathing for two additional smaller korai.⁷

The Near Eastern reliefs are extraordinary for several reasons. Together they are the remains of what is the largest related set of imported Near Eastern bronzes excavated in Greece. They are worked in a technically very competent but provincial style, most probably from the North Syrian portion of the Assyrian Empire where stone reliefs in an Assyrianizing style have been excavated both at Arslan Tash, which has been dated as early as the reign of Shalmaneser III (ca. 858–824 B.C.), to as late as the reign of Sargon II (721–705 B.C.),⁸ and Tell Ajaja, dated to the time of Musezib-Ninurta, governor of the city of Saddikanni whose name is inscribed on the lamassu (ca. 820 B.C.).⁹ Several of the fourteen distinctive motifs that survive are commonly found in the arts of Assyria, North Syria and Phoenicia. There are several balanced compositions arranged in relationship to a central sacred tree. These include a pair of winged genies with a representation of the god Assur above the central tree (Fig. 1). There are three pairs of sphinxes, each pair distinctive in detail from the other pairs (Figs. 4, 7 and bottom frieze of Fig. 2); a pair of goats (Fig. 2); a bull and a lion (Fig. 1); and a pair of lions, one missing now, attacking antelopes (Fig. 1). Two men control a central lion (Figs. 3 and 5). Two fish-skin clad men flank a central curly wool dressed personage (Figs. 2, 3 and 6). Processions include walking men wearing long fringed garments (Figs. 3 and 4), horsemen (Fig. 3), men with bulls (Fig. 1), and a file of antelopes (Fig. 2). Finally, there is a decorative floral motif (Figs. 1 and 2). The winged genies, the god Assur, the sacred trees, the processions of men and of horsemen are reminiscent of comparable figures and processions decorating Assyrian stone palace reliefs. In particular, the fragmentary winged genies are of unmistakably Assyrian origin. They may be readily compared with the winged genies from Khorsabad for style.¹⁰ Many comparable figures were carved on the walls of Assurnasirpal II's Palace at Nimrud, and were hammered into Shalmaneser III bronze doors at Balawat.¹¹ The Assur symbol floating above the central sacred tree surely represents Assyrian style and symbol.

The various processions reflect two distinct traditions. Processions of nearly identical men dressed in long fringed garments are frequently shown in Assyrian Palace sculpture.¹² The courtyard at the entrance to the throne room at Khorsabad was decorated with such a procession. The figures hammered into the bronze have Assyrian style garments, but the execution of the figures is not Assyrian. Their short broad proportions are generally seen in Hittite and Neo-Hittite sculpture. This distinction between motif and dress, and figure proportions can be seen in other sculptures from Neo-Hittite sites governed by Assyrians after their empire overthrew the local governments.

The men dressed in fish skins and curly wool reflect figures from an Assyrian religious tradition. The fish-skin clad priests on our bronze are not dehumanized into huge fish. Rather, they wear a skin-tight garment seemingly made of fish skin retaining a decoration

6. Borell and Rittig 1998: Taf. 56–57, and 66.

7. Borell and Rittig 1998: Taf. 54–55, and 57.

8. Pauline Albenda, 1988: Figs. 1–14, 18–22, and 24–26.

9. A. Mahmoud, 1983: Ills. 5–6.

10. Parrot 1961. *The Arts of Assyria*. Pls. 77, and 109.

11. Barnett. *Assyrian Palace Reliefs*. Pls. 137–173.

12. G. Loud 1935: Figs. 25, 29, 34–35, 38–44, and 55.



FIGURE 1. Reconstructed relief C. Athen Neg.Nr. 79/559.



FIGURE 2. Reconstructed relief D. Athen Neg.Nr. 79/553.

of scales and fins (Figs. 2, 3, and 5). Their proportions speak of the Syrian workmanship of the representations. The best known representation of the priests of the god Ea are in the sculptures at Fort Shalmaneser where the priests were represented as humans wearing fish-skins.¹³ These Assyrian representations show an entire fish standing on its tail with its unmistakable shape obscuring the human physiology. The priest's face protrudes from the side of the fish head. The fish mouth acts as a kind of crown above the human head. The arms and one leg of the priest protrude to confirm that a human body is behind or within the upright fish. But these are not the only types of Assyrian Ea priests represented in Assyrian Art. In Fort Shalmaneser at Kalhu, and at Til Barsip there are Assyrian wall paintings with representations of fish-skin clad priests.¹⁴ These representations show the priests garbed in skin-tight clothing of fish skin with fins attached just as do the fish-skin clad figures in the bronze. In addition, they have fishtails at the wrist and ankle and wear fish-skin cloaks rather like those of the Ea priests from Nineveh. At Nimrud the cloak is ankle-length as at Nineveh. At Fort Shalmaneser the cloak extends only to the knee. The differences in the representations between the Assyrian examples and those of our bronze suggest a different, North Syrian concept of how to represent the Ea priests, one of which is shown leading the

13. British Museum, time of Sennacherib from Nineveh. See also example from time of Ashurnasirpal II from Nimrud.

14. Reade 1979: 38–39, Tafel 5 and 9; Thureau-Dangin 1936: Pl. LIII; Oates 1962: 29.



FIGURE 3. Reconstructed relief A. Athen Neg.Nr. 79/564.



FIGURE 4. Reconstructed relief B. Athen Neg.Nr. 79/571.

procession of men (Figs. 3 and 8). The craftsmen of this region probably never saw the comparable Assyrian representation. They created a simplified type, without cloak or fish tails, perhaps based on a poor verbal description. It is also possible that these representations reflect the means of illustrating a sea god from another religious tradition. The Phoenicians had a sea god but little evidence survives to indicate how he was represented. Surely the central figure dressed in curly wool reflects Mesopotamian tradition.

Another reflection of North Syrian style can be seen in the figures controlling the lion by holding it up by its rear legs (Figs. 2, 3 and 6). At least three horse trappings with a variant of this motif have been excavated in Greece, on Samos¹⁵ and at Eretria on Euboea.¹⁶ Yet, what we see on the Olympia bronze is an unusual arrangement. Two symmetrically placed men control a single lion, which stands on its front paws, by lifting up its separated rear legs. Generally, the motif as seen in Syria shows a single central man controlling two lions, dangling each above the ground by a single rear leg. The Olympia bronze is a variation on the common theme. There are three Syrian horse trappings from Greece with this motif in its conventional form hammered repousse. One of these blinkers is dated by an Aramaic inscription which refers to Hazael of Damascus, a North Syrian king who reigned in the third quarter of the 9th century, B.C. Therefore, it is reasonable to consider the three similar examples

15. Jantzen 1972: B1151, B149, Pl. 53.

16. Charbonnet 1986: Figs. 33 and 39.



FIGURE 5. Relief 2, detail.



FIGURE 6. Relief 2, detail.

with one man and two small lions as a version of the motif commonly represented in the 9th century. Yet, there is one carved stone orthostat from Carchemish with a very similar motif. The slab illustrates two men with a small lion. The left-hand man dangles the lion by its rear right leg; the right hand man dangles the lion by its tail.¹⁷ The orthostats from Carchemish are generally dated to ca. 850 B.C. The Olympia version with two men and one large lion is from a later date. It may possibly have been worked as late as the third or even the fourth quarter of the 7th century B.C. The composition on the Olympia bronze is not identical to either of the two earlier renderings, but it is significantly closer to the Carchemish motif. The differences in the representation may reflect the transformations effected by the passing of time and/or a changing interpretation of the myth or religious symbolism that may underlay the motif.

A pair of very special, fragmentary sphinxes with human head growing from the neck, and a lion's head growing from the chest compare closely with a Neo-Hittite stone sculptured sphinx from Carchemish in North Syria.¹⁸ A less common type of sphinx is the one with a tall conical hat, one of a pair of such sphinxes which originally must have been arranged about the left hand tree (Figs. 4 and 7). This is a type of headdress seen on a few examples of earlier Syrian art.¹⁹ The horsemen of the frieze of riders wear caps or helmets of

17. Hogarth 1969: Pl. 14.

18. Hogarth 1969: Pl. 12; Akurgal and Hirmer. *Art of the Hittites*. Pl. 110.

19. Canby 1975: 240–242, Figs. 13–15; Akurgal and Hirmer. *Art of the Hittites*. Pl. 52.



FIGURE 7. Relief 6. DAI Athen Neg.Nr. 79/573.



FIGURE 8. Relief 1. DAI Athen Neg.Nr. OL5655.

typical Syrian type²⁰ (Fig. 3). The riders wear Syrian garments and both the riders and the horses are Syrian in their proportions.

The complex relationships with Syrian art can be defined through several distinctly different observations. In some instances we see purely Syrian motifs, and in other instances we see a North Syrian style of execution applied to foreign motifs, several Assyrian and a few of which may be Phoenician. It is this strong contribution of Syrian style and motif to the full range of the décor represented on the bronze that suggests that it may have originated in this region of the Near East.

A few motifs seem so commonly found throughout the Near East that one would be hard pressed to locate a place uniquely identified with it. A perfect example of this is seen in the elegant sleekness of two pairs of sphinxes (Figs. 3 and 7) that may be reminiscent in style to the naturalistic lions from Assurbanipal's Palace,²¹ or to an Egyptian lion from Deir el-Bahri.²² A sphinx is a human headed winged lion. Similarly positioned sphinxes are also found on Assyrian cylinder seals. The similarity of the sphinxes on the Assyrian seals to the above Egyptian example suggests that there may be an Egyptianizing influence to be found even on these seals. Yet, lions and sphinxes carved on Assyrian seals usually are very slender at least as far back as Middle Assyrian times, and are often in the same posture as our

20. Rittig 1996: 247f.

21. Barnett 1982: Pls. 68, 70–72, 86, 91–92, and 94.

22. Garnot, 1937: Pl. III.



FIGURE 9. Bronze repousse band, upper register, Khorsabad. OIM photograph 64340A, negative 43358A.

bronze sphinxes. Therefore it is not necessary to postulate Egyptian influence to explain the similarities. The face and hair of one pair of sphinxes resembles the face and hairstyle of an ivory excavated at Nimrud that is generally thought to be Phoenician, the head sometimes called the 'Mona Lisa'.²³

Mallowan, who discovered and published the head thought it could reflect Assyrian, Phoenician or Aramaean workmanship. He also compares it with Urartian work. Clearly the head does not reflect a single clearly defined local style. Therefore, while it is possible that this pair of sphinxes is Phoenician in style if not in workmanship, this is far from certain. Of course, it is certainly possible that a Phoenician, or a Phoenician trained bronze worker, worked in the North Syrian workshop that made the Olympia friezes. The lion bodies of the sphinxes may possibly reflect an Egyptianizing Phoenician style, but they may simply reflect the style seen on Assyrian cylinder seals or sealings. Similarly puzzling cases are those of the pair of goats facing one another from either side of a tree, and the file of ruminants. In both instances the animals stand or walk with their heads upright. In Phoenician art there are countless examples of similar animals grazing with their heads down to the ground. Examples have been found carved in ivory scattered throughout the Near East from Assyria to the Mediterranean, with many examples from vase painting and the late 8th and 7th centuries minor arts in Greece. Few if any, examples of ruminants with their heads up have been found, and the original source of this motif is uncertain. Yet another common motif is the lion attacking a ruminant. This motif is found broadly distributed from

23. Barnett 1982: Pl. 46a-b; Mallowan 1963: 3 and 5.

Assyria in the East to Greece in the West. In fact, this motif is incised on one of the Greek bronzes found together with the Near Eastern bronze.²⁴ For motifs with such a wide distribution we can say that they probably originated in the Near East, but we cannot identify a precise place of origin. The motif with a lion and a bull arranged symmetrically on either side of a tree is unusual, although occasionally on Assyrian cylinder seals one may find a sphinx and a lion, or some other two disparate figures symmetrically placed on either side of a tree. But in this example the proportions of the animals seem rather more Syrian than Assyrian. The depiction of two men controlling a single lion by its rear legs is yet another example of a rather unusual interpretation of a common motif. Thus, this set of bronzes adds significantly to the richness of the range of decorative figure scenes illustrated in Near Eastern art.

Very skilled craftsmen decorated the bronze strips using a variety of techniques. The technique used to create the basic figure, animal or vegetal decorations is called *repoussé*. This means that the bronze was hammered from the inside into a mould of wood or stone to create the basic design.²⁵ Then the intended visual surface of the bronze was further tooled to create the finished designs we see. Some of the final *décor* was pressed or incised on the surface to sharpen the outlines obtained from hammering, to emphasize details, or to add design or texture to the surface. Also, some of the final finish was hammered into the surface to provide more strongly textured surfaces and decorative details.²⁶ Patterns on the garments of the fish-skin clad men and the garments of the processional men are all added by surface hammering using small specially shaped tools to impress the patterns. On the other hand, the individually decorated shirts of the men walking with bulls reflect the use of incision to create the plaid or checkerboard patterns. The use of several techniques to complete the decoration of the bronze suggests that these bronzes were made originally for a demanding patron with expectations of exceptional quality.

Nothing about this Near Eastern bronze suggests it was created for its final use in Greece, therefore, it is valid to consider the original purpose for which it was made. Two basic original qualities of the friezes must be considered, if their original use is to be determined. First of all, the friezes have unused large rivet holes, spaced so that one can still partially reconstruct how a few of the friezes were originally fastened together, one frieze above the other. In their reuse in Greece these holes were ignored and new smaller rivet holes and rivets refasten the friezes into a new arrangement. Since the original use demanded that multiple friezes be fastened together it is unlikely that they are from bowls designed to contain liquids.

Secondly, the bronzes were all curved to their current vertical cylindrical shape for their original use. This negates the possibility that they were made to sheath something flat, like a door, a box, or something conical like a cauldron stand. The door posts supporting the Balawat gates of the Assyrian king Shalmaneser III (852–824 B.C.) in the British Museum are sheathed in semi-cylindrically shaped bronze worked to extend the subjects and friezes of the doors, including processions of men on foot or on horseback. The individually made register friezes are held together by rivets.²⁷ Thus, a possible original use for our bronzes was as sheathing for door posts.

24. Borell and Rittig 1998: Taf. 36.1 and 37.

25. Borell and Rittig 1998: Taf. 16.2.

26. Borell and Rittig 1998: Taf. 6–15, 17.

27. Barnett 1982: Pls. 138–139.

The 1928–1936 University of Chicago's Oriental Institute excavations of Palace F at Khorsabad found an open loggia or pavilion with two massive column bases that must have supported wooden columns.²⁸ In a major residence adjacent to the palace of Sargon several column bases were found in situ that also must have supported wood columns.²⁹ At the same site, the Oriental Institute excavated a number of examples of actual decorated bronze sheathing still attached to pairs of wooden column-like standards, about one-half meter in diameter. These framed several temple entrances. The temples were part of the palace complex of Sargon II. Several pairs of these standards are reconstructed in drawings. Photographs show them in situ.³⁰ These little known column sheathings are housed in the Oriental Institute Museum at the University of Chicago, and perhaps also in the Iraq Museum in Baghdad. They are horizontal bronze friezes, decorated with an array of symbolic figures.³¹ Several registers are combined by means of rivets into multiple register combinations. Each frieze combines repoussé, incision, and tooling, a sophisticated mixture of techniques comparable to those of the Near Eastern bronze from Olympia. In addition, the Khorsabad column standards each had two or more separate sets of bronze registers. Each set of registers consisted of two or more registers fastened to one another and to the wood standard by rivets that penetrated a shaped overlap between two adjacent registers.

A last consideration develops from the Assyrian cuneiform royal annals from the times of Tiglath Pileser III, 743–727 B.C. (Luckenbill I, 1926), Sargon II, 722–704 B.C., Sennacherib, 704–681 B.C., and Assurbanipal, 668–626 B.C. (Luckenbill II, 1927). These records assert that elaborate and noteworthy buildings with columned porticos called “bit hilani” were constructed as an element of the palace complexes. They are invariably identified as “Hittite”. Several noteworthy buildings with pairs of columns at their entrances have been excavated at Neo-Hittite sites in Syria and Anatolia.³² Columned buildings are shown in Assyrian reliefs. For instance, in Room 7 of Sargon's Palace at Khorsabad a garden pavilion with columns is shown. Another building with columns is shown in Ashurbanipal's Palace at Nineveh. At least one Assyrian inscription mentions a bronze column.

Sheathing for door posts or for decorated columns are the two likeliest original uses for the Olympia bronzes. Although there is no surviving evidence in North Syria for the use of decorated bronze sheathing on columns or door posts, the most likely original use for these bronzes was to sheath the columns or door posts of a significant building in North Syria. Such a building probably accommodated Assyrian officials for administration, residence or worship, since the tradition of such usage is Assyrian. The craftsmen may have been urged to make use of Assyrian motifs, but they rendered the décor mainly in their own local style. When the Assyrian Empire fell in 612 B.C., or when Assyria lost hegemony over this portion of its empire, the bronze decorations of the building or buildings were either scrapped or stolen. The bronze was somehow acquired by an itinerant trader or bronze worker and eventually was brought to Greece where some of it was reused with its original worked decorations, and some of it was melted down and reworked.

The original publication of the bronzes under discussion here suggests that the friezes were reused to create three Greek Daedalic sphyrrelaton statues, comparable, but larger than the three sphyrrelaton statues known from Dreros on Crete. It may be recalled that at the

28. Loud 1938: Pls. 38 and 41.

29. Loud 1938: Pls. 32B, and 48.15–17.

30. Loud 1936: Pl. 44. Loud 1936: Pl. 69 and Figs. 111–112.

31. Wilson 1994: 60–67, Fig. 2; Finkle and Reade 1996: 244–265, Abb. 9–14.

32. Frankfort 1952: 120–131, Figs. 1–7.

very beginning of this paper it was mentioned that the Near Eastern fragments were found together with 110 bronze fragments incised by a Greek craftsman with Greek Orientalizing designs. Analysis of fragments from both groups of bronzes suggests that all of the bronze came from a single smelting operation where consistency in production was achieved.³³ The analyses suggests that the so-called "Greek" bronze is most likely a melted down and reworked Near Eastern bronze, and that there was a significant trade in scrap metal in the late 7th century, B.C. This also explains the difficulties experienced in past attempts to identify the sources of worked bronze. We now have evidence, as close to proof as we are likely ever to have, that imported scrap metal was melted down and reused in Greece, and probably elsewhere in the ancient world. In addition, in this set of bronzes a few Near Eastern motifs were copied and somewhat modified, by the Greek artisan who created the final form.

The style of craftsmanship, and the proportions of the human figures, suggests the Near Eastern bronze may have been made some time during the late 8th or in the 7th century B.C. It may possibly be as early as the reigns of Tiglath Pileser III (745–727 B.C.), Shalmaneser V (727–722 B.C.), Sargon II (721–705 B.C.), or Sennacherib (704–681 B.C.). More likely, it is as late as the reign of Assurbanipal (668–626 B.C.). The excellent preservation of the worked surfaces, the lack of wear damage, and the lack of weathering suggest that it was in use only a short time before it was dismantled and scrapped. In its condition and its techniques of fabrication it strongly resembles the fine bronzes from Khorsabad which had little opportunity to develop signs of wear. As has already been noted, several of the motifs find parallels in the stone sculpture from that site; particularly, the winged genies, the processions of men, and the human headed winged lions or sphinxes.

Unfortunately, no single bronze survives in the Near East which has a comparable range of iconography, or which includes so broad a range of stylistic references. A large number of illustrations of a wide range of bronzes are published in a volume on Near Eastern bronze working centers.³⁴ Other publications of Near Eastern bronzes focus mainly on small vessels, fibulae, statuettes, horse trappings, arms, armor, and a miscellany of artifacts that seem unrelated to our set of bronzes. As we have already seen some comparisons may be made to ivories of Phoenician, North Syrian and Assyrian workmanship, many of which have been excavated at Nimrud.³⁵ The Phoenician and North Syrian ivories are thought to be plunder brought by Sargon II from the Mediterranean coast and other places in the west. The Assyrian annals record that gifts and tribute were paid to the Assyrian kings, and that the plunder of newly defeated peoples was a frequent consequence of Assyrian conquest. Surely, this is one major means by which Near Eastern motifs became so broadly distributed throughout the whole of Western Asia. In addition, the bronzes from Olympia provide convincing evidence for the Greeks of the Orientalizing Period adopting foreign motifs, transmuting them into Greek versions of the Near Eastern originals. This collection of bronzes worked in the styles of two different civilizations, Near Eastern and archaic Greek, discarded together in Brunnen 17 at Olympia, were used together to fabricate three archaic Greek korai. The decorations of the bronzes reflecting two distinctively different artistic traditions display versions of the same motifs, a lion attacking a ruminant, men on horseback, sphinxes symmetrically placed on either side of a tree, a ruminant with head upright, diag-

33. Borell and Rittig 1998: 61–62, 212–213.

34. Curtis 1998.

35. Orchard, Mallowan and Herrmann 1967, 1970, 1974, 1986, and 1992. Ivories from Nimrud (1949–1963) 1949. 5 vols.

onal checkerboards, and a four lobed vegetal pattern. While we are not seeing the first glimmerings of Orientalizing Greek work, we are seeing that even at the end of the 7th and the beginning of the 6th century, B.C. Greeks are continuing to adapt imported decorative models to their own use, ever enriching their own repertoire of decorations.

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Diversity in Ammonite Religious Iconography

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Abstract

Anthropomorphic artifacts related to the religious practices of the Israelites, Judeans and Philistines are in a different class from the larger than life size statues known from Egypt. At sites in the Levant, the vast majority of representations of gods and of individual humans appear as small ceramic figurines. In the cultures surrounding the Iron Age kingdom of Ammon, these figurines appear in a limited number of types. In contrast, a number of large stone statues, many shown with the white crown of Egypt or the Osiris style *atef* crown, have been found in Ammon itself. These statues, and several other types, including female stone statues and heads, have been described and classified in a major study by Abou Assaf, and were studied by Dornemann in his work on Transjordan.

In the past 20 years, no further attempts have been made to analyse the growing corpus of known Ammonite figures, apart from preliminary reports by Dabrowski concerning finds from Tall al-ʿUmayri, and a brief analysis of a figurine head from Tall Jawa by Daviau and Dion. To date, these articles constitute the only published typological studies of Ammonite ceramic figurines from recent excavations.

This paper is a study of 100+ figures in stone and ceramic from previous publications and from recent excavations. The purpose of this analysis is to identify the range of variables reflected in the iconography, classify more recent finds and increase the number of known types, determine the degree of homogeneity between stone statues and ceramic figurines, and compare the degree of variability with figurines from surrounding cultures.

Introduction

Anthropomorphic artifacts related to the religious practices of the Israelites, Judeans and Philistines are in a different class from the larger than life size statues known from Egypt. In contrast, the vast majority of representations of gods and individual humans appear as small metal (Negbi 1976) or ceramic figurines (Negbi 1966). In the cultures surrounding the Iron Age kingdom of Ammon, these figurines appear in a limited number of types. The best example is the relative homogeneity in the corpus of 854 Judean pillar figurines studied by Kletter (1996). In this case, variation was seen primarily in the facial features and hairdos of the mould-made heads. The torso and pillar were fairly consistent as a type although differences in size can be accounted for by the fact that these were often hand made (Kletter 1996: 29).¹

The work of Kletter draws on material from a large number of town sites which were excavated during a 100 year period.² These sites provide chronological and contextual settings

1. Apart from pillar figurines, Kletter identified other types of Judean figurines as well as male and female figures from Israel and Transjordan.
2. Kletter (1996) incorporates the study of the Jerusalem material, published by Holland (1977).

for the figurines, making it possible to associate them with the life and practice of a known political and social entity. Attempts to understand the religious practices and related artifacts of the Iron Age kingdoms of Ammon, Moab and Edom are based on random finds and artifacts from excavations at a small number of settlements excavated during the past half century, which are only now being published. A comprehensive study by 'Amr in 1980 consisted of an analysis of 109 anthropomorphic ceramic figurines,³ primarily from nine sites throughout Jordan, including the 'Amman Citadel, Sahab, Maqabalayn, and surface finds from Jalul. Some of the most productive sites for understanding the Ammonites were excavated more recently, such as the Lower Terrace of the 'Amman Citadel, and several sites to the south, including Tall al-ʿUmayri, Tall Jawa, and Jalul. These sites all share the same ceramic potting tradition and are culturally related, at least in this respect. It is not entirely certain that all of these sites were part of Ammon (Dearman 1996), since we cannot assume that political borders coincided with the limits of a ceramic tradition. A case in point are sites in the Jordan Valley, which share certain potting techniques with sites on the plateau, but are not included here due to the large number of variant traditions represented in their material culture. Instead, this paper includes only those anthropomorphic figures in stone and ceramic⁴ that were recovered at sites on the Ammonite plateau and which can be assumed to relate to Ammonite religious belief and practice.⁵

State of the Question

Fifty years of exploration in the region around modern day 'Amman yielded a number of stone statues and male heads, shown wearing the Osiris style *atef* crown. These statues, as well as several other types of male and female statues and heads, have been described and classified in a major study by Abou Assaf in 1980. In the same year, 'Amr completed his study of the clay figurines. At this time, Dornemann had not yet published his dissertation (1983), which includes a discussion of some of these same statues and figurines, especially those from 'Amman. In contrast to these finds from Ammon, no stone statues have been found in the regions of Moab or Edom, except for two stelae from Moab, namely the Balu' Stele and the ShWCh Stele (Bienkowski 1991: 35–36).⁶ Anthropomorphic figures do occur, but only in miniature, either in stone or metal, or more commonly, in the form of ceramic figurines, less than 15 cm in size.⁷

In the past 20 years, no further attempts have been made to analyse the growing corpus of known Ammonite figures, apart from preliminary reports concerning finds from Tall al-ʿUmayri (Dabrowski 1993; 1997; in press), and a brief analysis of a figurine head from

3. Fragments representing the human torso, feet and limbs ('Amr 1980: Figs. 105–114) are not included in this study.
4. 'Amr deals only with ceramic figurines, both free-standing and attached, for example, those on a model shrine. Along with their stylistic features, he subdivides the figurines on the basis of their formation techniques, distinguishing hollow figures from solid ones, and figurines with applied features from those with incised details.
5. In view of the number of statues and figurines reported in the past two decades (ca. 70 items), it is somewhat surprising that Aufrecht can state that "there is no single known artifact or feature in an Iron Age archaeological context that clearly and exclusively can be associated with the practice of religion" (1999: 152).
6. Recent discussion of the North Syrian cultural influences evident in the Jebel ShWCh stele is based on a comparison with a stele in the Museum of Tartus (see Abu Assaf 1992).
7. For an analysis of ceramic figurines and statues from the region of Moab, see Daviau (in press/b).

Tall Jawa (Daviau and Dion 1994). To date, these articles constitute the only published typological studies of Ammonite ceramic figurines from recent excavations.⁸

This paper is a study of 106 figures in stone and ceramic,⁹ including those previously studied.¹⁰ The purpose of this analysis is to identify the range of variables reflected in the iconography, classify more recent finds and increase the number of known types, determine the degree of homogeneity between stone statues and ceramic figurines, and compare the degree of variability to known Moabite figures (Daviau, in press/b) and, in a future study, with Edomite figurines and statues (Beck 1995). The typology begins with male figures,¹¹ first those in stone, and second, the ceramic figurines that share similar iconographic features. This is followed by other types of male figurines and by an example of a possible hermaphrodite figure. The second major class consists of the corpus of female stone heads and ceramic figurines.

Class I: Male Figures

Stone Heads and Statues with Egyptian Style Crowns (Types A/1–A/4)

Stone heads of male figures wearing an Egyptian, *atef* style crown, are represented in three types, with subtypes within each group (Fig. 1: a–c; Table 2).¹² These distinctions are based primarily on the shape of the crown, its size in relation to the size of the face, and secondarily, on the appearance of the face. Differences can be recognized in the style of the crown according to the shape and size of the central element, the conical white crown of Egypt with a knob at its apex, and the position and proportions of the flanking feathers. Type A/1 represents an *atef* crown with a round knob (#1), whereas crown Types A/2–A/4 are topped by a flattened disc. In all cases, the crowns are medium in size with a ratio of ca. 1: 1 in relation to the face,¹³ rather than tall, with a ratio of 2: 1, as in the Egyptian prototype. In this typology, the taller crowns of each type, those that are closer in proportion to the crown of Osiris, are classed as subtype 1. The short or squat crowns are assigned to subtype 2; these are broader at the top, and have a disc rather than a knob, or are curved in the shape of an arch (Daviau and Dion 1994: 163), as in subtype 3 (Fig. 1: c). Variation is also apparent in the details of the side feathers and their size relative to the crown. Some ex-

8. The figurines from Tall Jawa are included in the final report, especially in volume 2, *The Iron Age Artifacts* (Daviau n.d.).
9. Four additional ceramic heads are listed in Table 2 (#101–106), but are not included in the analysis because their features are worn or damaged. Also in Table 2, is the metal figurine of a seated male from Safut (Related Figure A; Wimmer 1987: Fig. 2), which is in the style of a Late Bronze Age peace figurine, and as a result, is not included in the typology due to its supposed early date. Finally, hollow ceramic statues, such as those known from orvat Qimit (Beck 1995), ‘En aeva (3+; Cohen and Yisrael 1995), and Wadi ath-Thamad Site 13 (12+; Daviau in press/b), are rare in Ammon. Only a handful of sherds with relief from Tall Jawa suggest the presence of such figures. Now, recognizable fragments (Table 2: F) from Tall al-‘Umayri (Herr et al. 1999: Fig. 17) confirm their presence.
10. There are one or two instances where the same figurine may have been referred to by both Dornemann and ‘Amr; for example, #32 and #33 from the ‘Amman Citadel (cited as Dornemann 1983: Fig. 89: 2 and ‘Amr 1980: Fig. 124). Because full documentation concerning Museum numbers is not present in both theses, this writer was unable to eliminate this possible overlap.
11. Male figures are discussed first, because they are unusual, given the predominance of female figurines in neighbouring cultures.
12. Each figure is numbered, and it is this number that appears in the text. See Table 2 for references to the published source for each statue or figurine.

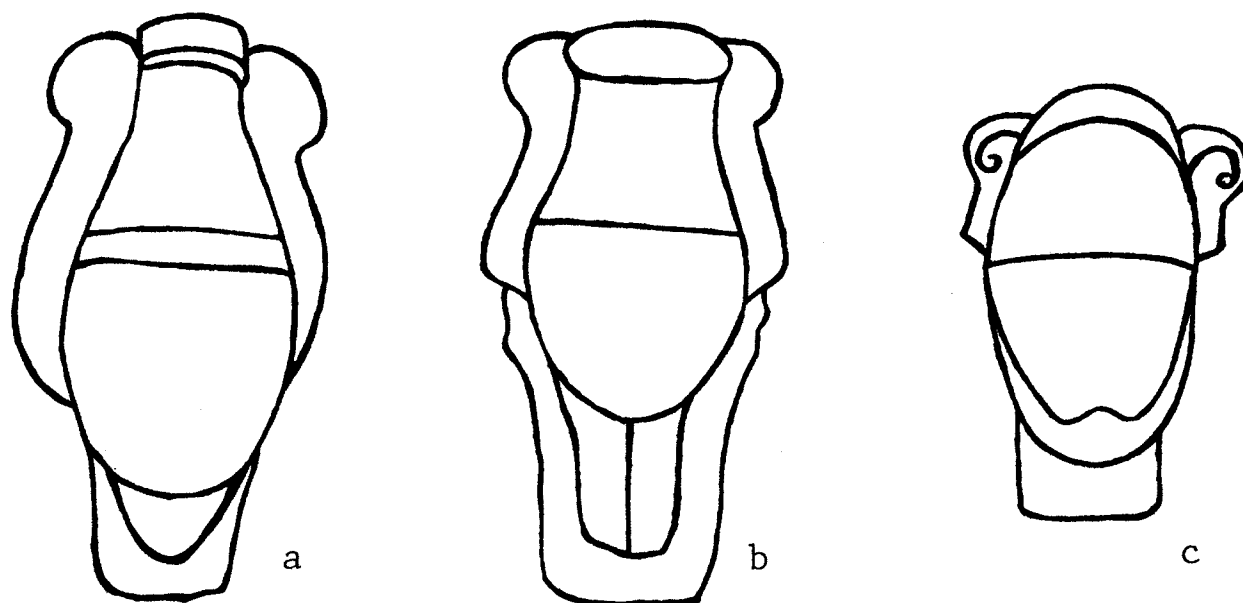


FIGURE 1. Three styles of *atef* crowned heads; drawn by Stephanie Feltham.



FIGURE 2. Stone head with Neo-Assyrian style headband and earrings; published with permission from *Hesban after 25 Years* (Fisher 1994: 89).

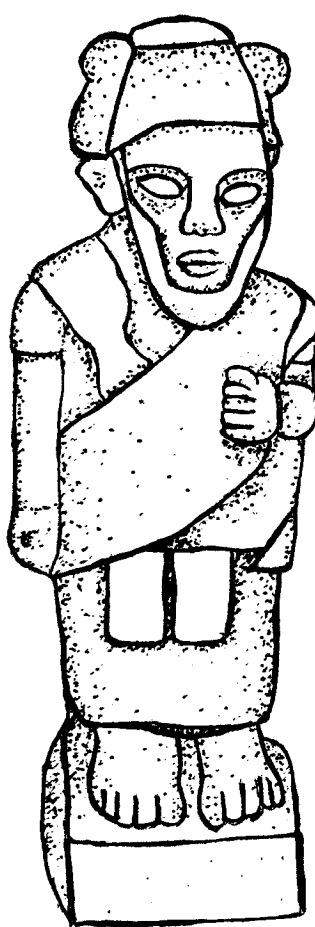


FIGURE 3. Stone statue, after Abou Assaf (1980); drawn by Stephanie Feltham.



FIGURE 4. Stone statue, Yr'zr, son of Zakir, after Dornemann (1983); drawn by Stephanie Feltham.

amples have no decoration, whereas others appear with an incised groove running around the curl of the feather, comparable to the motif on Proto-Aeolic capitals (Daviau and Dion 1994: 62).

Secondary variables consist of the details of the face. In almost all cases, a beard and mustache are indicated in greater or lesser detail. The most elaborate head reflects Assyrian influence (Fig. 2), especially in the details of the beard and hairdo, the rosette headband, and the earrings (Aarons 1982: Cover). The condition of several heads is such that certain of these features are badly worn or damaged and the degree of detail cannot be determined with certainty. In one instance (#6), the head may be that of a female (‘Amr 1990: 116); the hair extends onto the shoulders, the ears are larger than normal, and the evidence for a beard appears to be missing. Within the class of crowned stone male figures are two statues, one (#11) is badly damaged and the other (#12; Fig. 3) is quite well preserved. In both cases, these figures wear a squat version of the *atef* crown with local, or Syrian, style clothing.¹⁴

Atef Crowned Ceramic Figurines (Types A5–A6)¹⁵

The importance of the *atef* crown in Ammonite iconography is seen in the use of this motif on three ceramic figurine heads, one from ‘Amman (#14), one from Tall Jawa (#13) and one from Jalul (#15), east of Madaba.¹⁶ In this group as well, sub-types reflect a similar range of variables, especially in the shape of the crown and the ratio of its size to that of the face (Daviau and Dion 1994: Table 1). The most distinctive head is that of a flute player from Jalul with a broad, squat crown,¹⁷ which suggests a change in the symbolism of the crowned male figure from a divinity (probably El), to that of a votive figure.¹⁸

Headless and Uncrowned Male figures with Egyptian characteristics (Types B/1–B/4)

Several statues depict the male body in an Egyptian style garment (Type B/1). The best example of this type (#16) shows a figure dressed in a full length garment, holding a lotus blossom. Closely related are a complete standing figure (#18) and 2 heads of non-royal appearance (#19–20; Types B/4–B/5), characterized by Egyptian style hairdos and garments, including the Egyptian kilt.

13. One head (#8) is broken, with the result that the ratio of the crown to the face cannot be determined. The suggestion that this head is from Moab was not accepted by Horn (1973: 177), who knew of no true provenience for the piece, although he favoured the ‘Amman region since 10 heads were found during his year in ‘Amman as director of ACOR (1971).
14. Compare the appearance of an Assyrian genius statue from Hadatu in the Aleppo Museum (Parrot 1961: Fig. 61). The feet are visible from the front but not from the back, where the garment hangs down to the base. A diagonal band, possibly the edge of the upper garment, crosses the chest in front and back.
15. Statues and figurines should be in separate classes; however, for the purposes of this study, they are distinguished as subtypes, since the emphasis is on the use of iconographic motifs rather than on function. Here the small figurines are assigned a code to indicate both their stylistic similarity to the stone heads, and their difference in size and type.
16. These three heads, and one other of this type from Bethsaida (Arav 1992: Fig. 2), were mould made, probably free-standing, but not formed completely in the round. None appear to be plaques, as previously suggested by Daviau (Daviau and Dion 1994: 158).
17. The male figurine head from Jalul was discovered during the 1994 field season and published in 1996, subsequent to the study by Daviau and Dion (1994).
18. The best examples of musicians are those from Philistine sites (Dothan 1977).

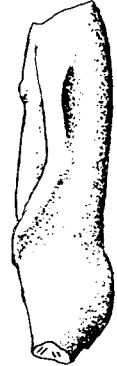
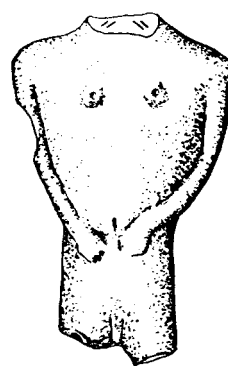
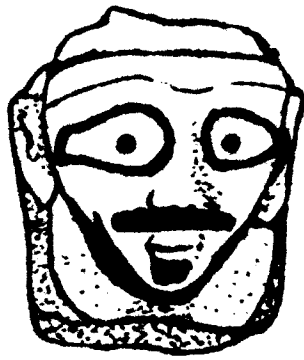


FIGURE 5. Horse and rider male head, after Dornemann (1983); drawn by Stephanie Feltham.

FIGURE 6. Silt stone male statuette; drawn by Martin Beckmann.

Local Style male figures (Type C/1–C/3)

One of the best-known stone statues from Jordan is that of Yr'zr, son of Zakir, son of Sanipu (#21; Fig. 4), who appears uncrowned, wearing only a headband to hold his hair in place. He is clothed in a long pleated garment, a tunic with a shawl that wraps diagonally across his chest, and a sash with its ends hanging below the tunic just above his feet. Although there are some Egyptian features present in this statue (for example, he carries a lotus blossom in his left hand), the garments are sufficiently different to characterize the style as local, or possibly Syrian.¹⁹ This style of garment is present on two ceramic figurines (#23, 24), showing that it is a motif that transcends its medium. A single stone head (#22) of a male with a beard also appears to reflect local traditions.

Crowned ceramic figurines (Types D/1–D/3)

More than one style of crown is represented on ceramic male figurines. Type D/1 can be described as a stacked crown with horizontal parallel lines, while the second style (Type D/2) is a pointed crown with grooves radiating diagonally from one or more, central vertical line. Examples of this type come from Tall al-ʿUmayri (Dabrowski 1997) and from ʿAmman. Koutsoukou and Najjar (1997: 129; fig. 8) identified the ʿAmman head as that of a rider, belonging to the horse and rider type of figurine known from tombs of the late Iron Age II. However, these crowned heads appear to be in the round, whereas the male heads of horse and rider figurines usually appear flat in the back or even concave (ʿAmr 1980: Figs. 115–b, 116–b, 117–b).

Horse and Rider figures (Type E/1–E/4)

Horse and rider figurines begin to appear in Iron Age contexts in Transjordan and become increasingly common in the Persian period throughout the Levant. Two complete examples were in a tomb at Maqabalayn (Harding 1950), while a third is without provenience (ʿAmr 1980: 139). Head fragments with the same facial features and painted decoration can be assigned to this same type (Fig. 5). In this corpus, 10 heads, 3 complete figurines with horses,²⁰

19. Dornemann (1983: 155, 159) emphasizes the influence of Assyria on northern Syria and the transmission of this influence to the cultures of Transjordan.

20. Harding (1950) mentions two horse and rider figurines from the Maqabalayn tomb, although ʿAmr (1980: 138; Fig. 115) mentions only one, and lists two others as of unknown provenience. Since this type of figurine appears to be common in the ʿAmman area, they are all included here.

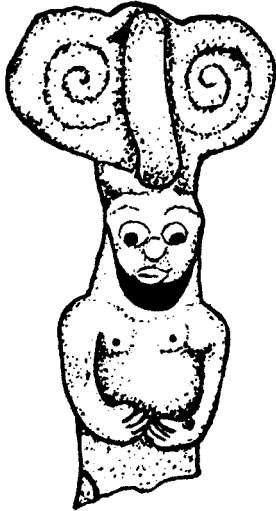


FIGURE 7. Hermaphrodite figurine, after Dornemann (1983); drawn by Stephanie Feltham.

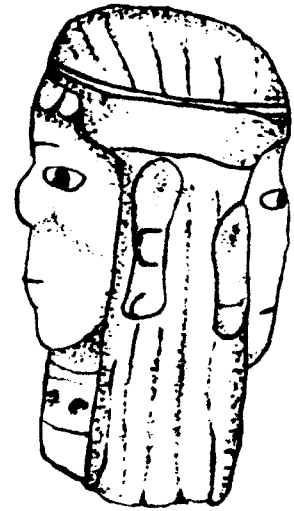
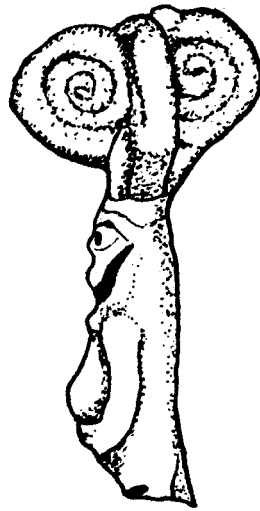


FIGURE 8. Stone head of female, after Dornemann (1983); drawn by Stephanie Feltham.

and one torso constitute 21.2% of all ceramic figurines, and 25.0% of the male figures. Three heads with pointed caps or helmets and black paint on the chin, suggesting a beard, mark these figures as male even though they have long hair to their shoulders. In Dornemann's second group (#37–39), a flat cap crowns each head, and only one head has a black painted beard and mustache. Dornemann therefore classified the two remaining heads as female, although for our purposes, these heads are included with the male, horse rider type.

Stone statuette of a naked male (Type F)

Among male figurines, a unique find from Tall Jawa was a miniature stone figure of a naked male (#45=TJ 1877; Fig. 6). The silt stone torso of this beautifully formed male figure sustained damage to its right arm and was without its head and left leg. Although the base of the right leg is damaged, it was drilled vertically (0.30 cm deep) in antiquity, and may have had an attachment. The left leg is broken across the upper thigh but was not drilled so that originally the leg was full length.

The body is smooth without elaborate detail. Only the nipples are somewhat exaggerated, while the arms are slimmer than would normally be the case. The stance suggests a standing figure with his arms framing his upper body and bending so that the hands can rest side by side on his abdomen. The hands appear to be on either side of the navel although this feature was only faintly indicated. The back of this statuette is finished and the small buttocks are well defined. No other features help us to identify this figure nor what it meant to its owners.

Hermaphrodite figurine (Type G)

Only one example of a possible hermaphrodite figurine (#46; Fig. 7) is known from Ammon. The figure has a male head with beard, and appears to be pregnant. Although this is a unique figurine type in Transjordan, it is not uncommon for male figures to have a fat stomach. For example, ceramic vessels from Rhodes that show a male kneeling, with his hands on his knees, show a prominent stomach, with no implication that the male is pregnant (Higgins 1970: Pls. 17: 82, 83; 18: 86, 88). Of special interest is an attachment on the

head of the 'Amman figurine which is in the shape of two proto-Aeolic capitals, facing in two directions. A similar attachment was recovered from Tall Jawa, but the figurine or model shrine to which it may have been attached was not recovered.

Class II: Female Figures

The second major class represents the female statues, heads, and figures. In this class also, there are both monumental stone figures and small ceramic figurines that share similar iconographic features.²¹

Female Stone Figures (Type H/1 and H/2)

Close to one another in iconographic detail are four stone heads (#47–50) representing a woman with long hair, a headband, and necklaces (Fig. 8). Each head has two faces, looking in opposite directions. Although the four sculptures are not identical in every respect, Dornemann's comparison of 11 measurements for each face shows an average variation of only 2.1 cm (1983: 158). These heads were apparently part of an architectural unit, since there are dowel holes in the top of each one. Discussed in detail by both Abou Assaf and Dornemann, the importance of these heads for our study is twofold; first, they are part of the stone sculpture tradition of Ammon, and secondly, certain features also appear in a complete stone statue, as well as in small ceramic figurines and moulds. This replication of similar characteristics in a different medium, similar to the situation of the *atef* crowned male figures, points to a more than ordinary function for these heads.

Ceramic Female Heads and Moulds (Types H/3–H/6)²²

Small figurines, consisting exclusively of heads and moulds fall into five subtypes, the two most important of which (H/2, 3; #51–57) depict the same female face as that of the stone heads. Among the three moulds from 'Amman, one (#52) shows a female with the same hairdo and fancy earrings as a small figurine from Tall Jawa (#51). In comparison to the 'Amman moulds which represent only the head, the Tall Jawa figurine is preserved almost to the waist, even though it too appears to be mould made. Two moulds show a face in profile (#55, 57), which is rather unusual. Within their own subtypes are other female heads and moulds that show variation in the appearance of the hair and of the facial features (#57, 58). Because these images represent only the face and jewellery around the neck, they cannot be further defined in terms of their variables.

Local Style Female Statue (Type J/1–J2)

Only one complete statue is preserved that depicts a female (#59). Although badly damaged, it is clear that her hair hangs in locks to her shoulders, and that she wears fancy earrings, and is dressed in a long garment with a tunic and sash. Just as with the male figures, where a local style could be distinguished from a more international one, her clothing can be described as local, in view of the fact that three male statues appear to wear similar garments. The treatment of the feet and the hem of the garment is also similar to that of the male statues and reflects the stone carvers' technique of providing support for the statue, while showing the feet only from the front.

21. No female figures in metal dating to the Iron Age are known from Ammon or from Moab.

22. These small figures and moulds are technically in a separate class but are so closely related to the larger stone heads, that they are given a related code.



FIGURE 9. Stone statue of a female; published with permission from *Hesban after 25 Years* (Fisher 1994: 85).



FIGURE 10. Ceramic figurine of female with wings of a chair, after Daviau (1996); drawn by Diane Flores.

A second stone statue (#60; Fig. 9), preserved only to the waist, is that of a woman, who is shown wearing a pleated dress with a high neck and short sleeves, fancy earrings and bracelets, but no necklace. Surprisingly, she supports her breasts, even though she is fully clothed. The iconography of this figure is unique and it is difficult to place her among the dominant styles identified so far, although her garment may be local. Small figurines that hold their breasts are usually naked and are classed separately below.

Seated Female Figurine (Type K/1)

Another unique figure is that of a female figurine from Tall Jawa (#61; Fig. 10) that depicts a woman, probably seated, who wears a shawl and is flanked by the wings of a chair. Her hands are in the form of fists, and are below her breasts but not touching them.²³ This figure has its closest parallels in Greece and in the Aegean, although all of these examples appear to be later in date. Although of great interest in view of the high degree of preservation, including the paint on her face, shawl, and wings of the chair, this figure is alone in her type.

23. For a detailed description, see Daviau n.d. Later parallels always depict a female dressed in a long gown. Although there are no details of dress preserved on the Tall Jawa figurine, her shawl makes it clear that she too was dressed.

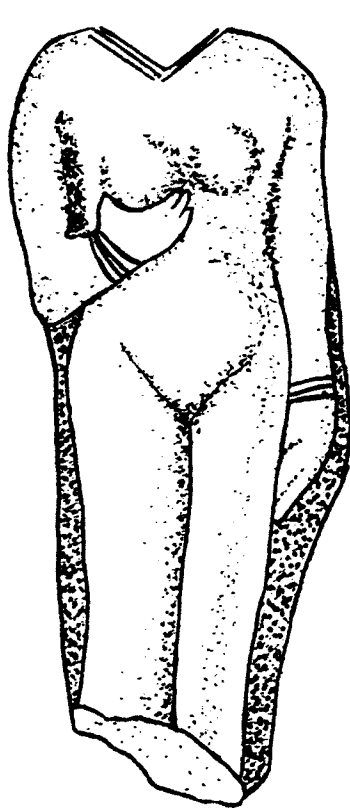


FIGURE 11. Ceramic figurine, naked female holding one breast, after Dabrowski (1997); drawn by Stephanie Feltham.

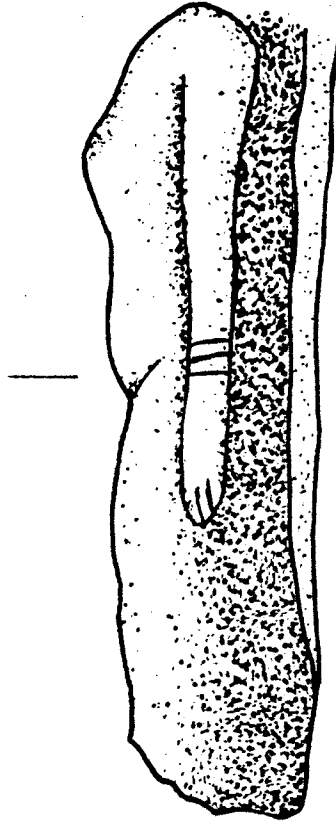


FIGURE 12. Pillar figurine head with shawl, after Dabrowski (1997); drawn by Stephanie Feltham.

Naked Female Figurines (Types L/1–L/5)

Better known as a type are the figurines that depict naked females, although in the group from Ammon, no two are alike. In most cases, these are fragments that only show the torso and part of the legs; details of the face, and the position of the hands is often missing. Two of the best examples are from Tall al-ʿUmayri; one (B) is a plaque, dated to the Late Bronze Age, of a female with Hathor curls, holding one breast with her right hand (Fig. 11); the second (#65), also holds her right breast, but holds a child with her left arm.

Pillar Figurines (Types N/1–N/7, P/1)

No complete pillar figurines of the types known from Judah are present in this corpus. What does appear in Ammon are female heads (#74–76) covered with a shawl (Fig. 12), that look similar to certain Moabite style pillar figurines (Worschech 1995: Fig. 2). Fragments consisting of a hand striking a drum can also be attributed to pillar figurines, on the basis of more complete figurines from Mount Nebo and Wadi ath-Thamad Site 13, both in Moab (Daviau in press/b), as well as figurines from Cyprus (Meyers 1987). One figurine (#82) from Jalul that appears to be naked holds a disc in both hands, just below her breasts.²⁴ As a type, figurines holding a disc or a drum are usually in the form of pillar figurines, although this could not

24. This figurine type is more common in Moab, where 16 figurines holding discs or playing drums can be identified (Daviau in press/b). Additional fragments of discs, with and without hands attached, are reported for Wadi ath-Thamad Site 13 (Object Register, 1997, 1999).

be confirmed in this case. A pillar figurine in a class by itself (#88) consists of a solid pillar of clay, moulded on one side in relief with the form of a naked female, holding her breasts.

Generic Anthropomorphic Figurines (Types R/1–R/4)

The last group of ceramic figurines which can be assigned to various types are those which represent humans, without any specific sexual features. These figurines, mostly heads with a pinched nose and small clay pellet eyes (#92–94), may have been either free standing or served as protomes, attached to a vessel or model shrine.²⁵ In a variation of this type (#95), all facial features were formed with a drill.

Analysis

In the corpus as a whole, there are 15 types (Table 1), five of them major, including *atef* crowned figures (15%), horse and rider figurines (14%), female heads with fancy earrings (11%), naked females (10%), and pillar figurines (14%). Of these five types, two appear both in stone and ceramic form with similar features. In order to classify the variables within each type, distinctions must first be made in terms of size, body type and stance. Size is usually linked to material and function, for example the stone statues and heads probably functioned in a more formal setting than small ceramic figurines with similar iconographic features.²⁶ So too, body type and stance are often related; body types include free-standing, supported, attached, pillar, protome, and hollow statues. Secondary variables within each of these body types consist of details of appearance, including style of crowns, details on the feathers flanking the crown, ratio of crown to head, presence and types of headbands, shawls, hairdos, earrings, necklaces and other jewellery, facial features, position of arms and hands, clothing, or lack thereof, and details of the pubic area. For example, of those figures wearing an *atef* crown, 1 head out of 15 (6.6%) has an Osiris beard; 13 or 86.6% have a beard and mustache that is non-Egyptian in style. In this group, changes in the style of crown are apparent, especially the ratio of crown to head size. The second largest single group consists of male figurines of the horse and rider type. These ceramic, mould-made figurines are more homogeneous in size, shape and appearance than the *atef* crowned heads. Variation is seen most clearly in the type of cap or helmet worn, rather than in the moulded and painted facial features.

Among female figurines, an important type is the naked female figures. Due to the fragmentary nature of many of these finds, precise sub-types are difficult to identify, although several of the women appear to hold their breasts or to carry a child on the left hip.²⁷ So too, not one complete pillar figurine is present in the corpus, with the result that sub-types are assumed on the basis of known types from surrounding cultures, such as the female holding a drum or tambourine (Meyers 1987, 1991; Tubb et al. 1996). Only the stone heads of a woman with fancy earrings show evidence of repetition of iconographic elements that are also represented in ceramic. Among the remaining figurines, heads, and statues, 26 out of 30 (86.6%) represent unique examples of their sub-type, with no two figurines produced from the same mould.

25. One figurine appears to have carried something on its head, such as a lamp or bowl (#93).

26. All the figurines from Tall Jawa were in domestic contexts. The pillar figurines from Judah were recovered from various contexts, including tombs, caves, cisterns, and pits, as well as from houses, streets, casemate rooms and gate areas (Kletter 1996: Fig. 31); none were in temples.

27. As far as can be determined, there are no examples of a female lying on a bed, such as those from Deir el-Bala (Tadmor 1982).

When this corpus is compared to those of neighbouring cultures, several interesting observations can be made. Most striking is the large number of male figurines (45%) in comparison to Iron Age Moab (8%). At Samaria, 2 male heads and 1 fragment were identified, and at Jordan Valley sites, 4 male figures are reported (Kletter 1996: 240).²⁸ On the other hand, female figurines dominate the Judean corpus, especially pillar figurines (854, plus 98 of unknown provenience; Kletter 1996: App. 1–3).²⁹ So too, the relative homogeneity of the moulded heads of Judean pillar figurines (Kletter 1996: Fig 23; Albright 1939: Pl. C) is reminiscent of the great homogeneity within the hoard from the Middle Bronze Age Temple of Obelisks at Byblos, where 113 figurines of standing males wearing a conical helmet all appear to come from the same, or a similar, mould (Seeden 1980: 135).

Altogether, 20 figures (45 % of all male figures) reflect Egyptian influence, which may in fact be mediated through another culture, such as Phoenician (Barnett 1951: 36) or Syrian. The dominant feature is the *atef* crown, shown in one style or another, on 15 out of 20 crowned male figures (75%). The importance of this crown is very significant for Ammonite iconography and probably for Ammonite religion, where the association of the *atef* crown with a divinity, probably El, is the most likely explanation (Daviau and Dion 1994: 164). The identification of the crowned figures as a deity rather than a ruler is supported by the fact that the same image appears both in stone statues and in small ceramic heads. The same may be said of the female images, where the same face appears in stone and on ceramic figurines and moulds, although in this case identification is less certain;³⁰ these heads are often related to the ivory image of a woman's face from Nimrud, which is shown without earrings (Barnett 1982: Pl. 50: 2). What is clear from this analysis is that Ammonite iconography is characterised by certain well defined types within a larger repertoire of great diversity.

28. Male figurines from Philistine sites are not included in this study.

29. Although Kletter addresses the issue of the lack of male figurines in Judah, he disregards a male figure from Maresha (1996: 78, Fig. 8: 5), which he characterises as an Ashdod type.

Table 1: Major types

<i>Type</i>	<i>n</i>	<i>%</i>
Atef crowned	15	15
Egyptian style	5	5
uncrowned local style	4	4
crowned local style	5	5
horse and rider	14	14
stone statuette of a naked male	1	1
hermaphrodite	1	1

30. The identity of the “woman at the window,” represented in ivory inlays, remains uncertain, although Mallowan (1978: 33, Pl. 31) identified her as a votary in the cult of Aphrodite in Cyprus, derived from the cult of the Babylonian prostitute goddess Kilili. Discussions of goddesses by Pritchard (1943) and Kletter (1996) pertain more directly to Israelite and Judean religion.

Table 1: Major types (*cont.*)

<i>Type</i>	<i>n</i>	<i>%</i>
female stone heads	4	4
ceramic female heads and moulds	7	7
local style female statues	2	2
seated female with shawl	1	1
naked female figurines	10	10
possible pillar figurines	14	14
relief on pillar	1	1
unidentified	16	16
Total	100	100

Table 2: Catalogue of Anthropomorphic Figurines from the area of 'Amman

#	<i>Comments</i>	<i>Type</i>	<i>Site</i>	<i>Reference</i>
I. Male Figures				
I-A/1–4. <i>Atef</i> crowned stone figures				
1	head/knob	A/1a	'Amman*	Horn 1973: Pl. XVII: 2
2	head/knob	A/1b	'Amman(?)	Abou Assaf 1980: Pl. IV; Head V
3	head/knob	A/1c	'Amman	'Amr 1990: Pl. 7A
4	head/knob	A/1d	'Amman(?)	Aarons 1982: Cover
5	head/disc/tall	A/2a	'Amman(?)	Abou Assaf 1980: Pl. IV; Head IV
6	head/disc/tall	A/2b	'Amman	'Amr 1990: Pl. 8B
7	head/disc/medium	A/2c	Abu 'Alanda	'Amr 1990: Pl. 7B
8	head/broken	A/2d	'Amman(?)	Abou Assaf 1980: Pl. XI; Head XX
9	head/squat	A/3a	'Amman(?)	Abou Assaf 1980: Pl. IV; Head VI
10	head/squat/curved	A/3b	'Amman(?)	Abou Assaf 1980: Pl. XI; Head XIX
11	local clothing	A/4	Ḥ. al-Ḥaġġār	Abou Assaf 1980: Pl. I; Statuette I
12	local clothing	A/4	'Amman	Abou Assaf 1980: Pl. III; Statuette III
I-A/5–6. <i>Atef</i> crowned ceramic figures				
13	head/tall	A/5	Tall Jawa	Daviau and Dion 1994: Fig. 2
14	head	A/6	'Amman	Ecole Biblique 1989: Fig. 15
15	head, flute player	A/6	Jalul	Younker <i>et al.</i> 1996: Pl. 12
I-B/1–2. Egyptian style headless statues				
16	shoulder to base	B/1	'Amman	Abou Assaf 1980: Pl. VII; Torso XI
17	fragment	B/2	'Amman	Abou Assaf 1980: Pl. VII; Statuette X

Table 2: Catalogue of Anthropomorphic Figurines from the area of ʿAmman (*cont.*)

#	Comments	Type	Site	Reference
I-B/3–5. Uncrowned Egyptian style figures				
18	attached to support	B/3	ʿArğān	Abou Assaf 1980: Pl. VIII; Statuette XII
19	head	B/4	ʿAmman	ʿAmr 1990: Pl. 8A
20	head	B/5	(?)	Abou Assaf 1980: Pl. V; Head VIII
I-C/1. Local style clothing stone statues				
21	Yrʿzr	C/1	ʿAmman	Abou Assaf 1980: Pl. VI; Statuette IX
I-C/2. Local hair style on stone statues				
22	head	C/2	ʿAmman	Abou Assaf 1980: Pl. X; Head XVII
I-C/3. Local or Syrian clothing on ceramic figurines				
23	description only	C/3	Tall al-ʿUmayri	Dabrowski in press: No. 3106
24	fragment	C/3	Tall Jawa	Daviau n.d.: Fig. 2.35: 1
I-D/1–3. Crowned ceramic figurines (other crowns)				
25	head/stacked	D/1	el-Yadoudah	Franken and Abujaber 1989: Fig. C.5; EM 13/3
26	head/pointed	D/2	Tall al-ʿUmayri	Dabrowski 1997: Figs. 18: 13–14
27	head/pointed	D/2	Tall al-ʿUmayri	Dabrowski 1997: Figs. 18: 15–16
28	head/pointed	D/2	ʿAmman	Koutsoukou and Najjar 1997: Fig. 8
29	head/pointed	D/3	ʿAmman	Zayadine 1973: Pl. XIV: 1
I-E/1–4. Horse and rider figures (cap/helmet)				
30	head/pointed	E/1	ʿAmman	Dornemann 1983: Fig. 87: 1
31	head/pointed	E/1	ʿAmman	Dornemann 1983: Fig. 87: 2
32	head/pointed	E/1	ʿAmman	Dornemann 1983: Fig. 89: 1
33	head/pointed	E/1	ʿAmman	ʿAmr 1980: Fig 124**
34	complete	E/1	Maqabalayn	Harding 1950: Pl. XIII
35	complete	E/1	Maqabalayn	Harding 1950: Pl. XV: 12
36	complete	E/1	ʿAmman(?)	ʿAmr 1980: Fig. 116
37	head/flat	E/2a	ʿAmman	Dornemann 1983: Fig. 87: 3
38	head/flat	E/2b	ʿAmman	Dornemann 1983: Fig. 87: 4
39	head/flat	E/2b	ʿAmman	Dornemann 1983: Fig. 87: 5
40	head/floppy	E/3a	Jalul	Ibach 1978: Pl. XXVIII B (2)
41	head/floppy	E/3b	esban	ʿAmr 1980: Pl. 27: 3a, 3b
42	head, fragment	E/3c	Jalul	Yunker n.d.
43	damaged head	E/3d	ʿAmman	Koutsoukou and Najjar 1997: Fig. 5
44	torso only	E/4	Tall al-ʿUmayri	Dabrowski 1997: Figs. 18.18–18
I-F/1. Naked male figure				

Table 2: Catalogue of Anthropomorphic Figurines from the area of ʿAmman (*cont.*)

#	Comments	Type	Site	Reference
45	torso	F/1	Tall Jawa	Daviau n.d.: Fig. 2.34: 1
I-G/1. Hermaphrodite(?) ceramic figurine				
46	legs missing	G/1	ʿAmman	Harding 1951: Pl. XIV: 43
II. Female Figures				
II-H/1. Female stone heads				
47	fancy earrings	H/1	ʿAmman	Dornemann 1983: Fig. 93: A
48	fancy earrings	H/1	ʿAmman	Dornemann 1983: Fig. 93: B
49	fancy earrings	H/1	ʿAmman	Dornemann 1983: Fig. 94: C
50	fancy earrings	H/1	ʿAmman	Dornemann 1983: Fig. 94: D
II-H/2–6. Ceramic female heads and moulds				
51	fancy earrings	H/2a	Tall Jawa	Daviau n.d.: Fig. 2.29/1
52	fancy earrings	H/2a	ʿAmman	Dornemann 1983: Fig. 88: 3
53	centre part	H/3	ʿAmman	Dornemann 1983: Fig. 88: 2
54	centre part/profile	H/4	ʿAmman	Dornemann 1983: Fig. 88: 1
55	description only	H/4	Tall al-ʿUmayri	Dabrowski in press: No. 3020
56	description only	H/4	ʿAmman	Koutsoukou and Najjar 1997: 128
57	without(?) earrings	H/5	ʿAmman	Maʿayeh 1960: Pl. III: 2
58	crude/profile	H/6	el-Yadoudah	Franken and Abujaber 1989: Fig. C.5: EM/N
II-J/1–2. Female stone statues—local style				
59	local dress/complete	J/1	Ḥ. al-Ḥaḡḡār	Abou Assaf 1990: Pl. II; Statuette II
60	dress, holds breasts	J/2	ʿAmman(?)	Aarons 1982: 32
II-K/1. Ceramic female with wings of chair				
61	painted, with shawl	K/1	Tall Jawa	Daviau 1996: Fig. 4: 5
II-L/1–5. Naked Female figurines				
62	2 hands hold breasts(?)	L/1	Jalul	Yunker n.d.
63	2 hands hold breasts	L/2	Tall al-ʿUmayri	Platt 1989: Fig. 20.5, U342
64	holds 1 breast & belly	L/3	ʿAmman	Zayadine 1973: Pl. XX: 1
65	holds breast+child	L/4	Tall al-ʿUmayri	Dabrowski 1997: Figs. 4–5
66	legs only, no hands	L/5	Tall al-ʿUmayri	Yunker 1990: Pl. 16, left
67	legs only, no hands	L/5	Tall Jawa	Daviau n.d.: Fig. 2.30: 1
68	legs only, no hands	L/5	Tall Jawa	Daviau, n.d.: Fig. 2.30: 3
69	legs only, one hand	L/5	Tall Jawa	Daviau, n.d.: Fig. 2.30: 2
70	legs only	L/5	ʿAmman	Zayadine 1973: Pl. XX: 2
71	feet only, with anklets	L/5	Sahab	ʿAmr 1980: 70–71, fig. 49

Table 2: Catalogue of Anthropomorphic Figurines from the area of 'Amman (*cont.*)

#	Comments	Type	Site	Reference
II-M/1–2. Free-standing, fragment				
72	hands at sides	M/1	el-Yadoudah	Franken and Abujaber 1989: Fig. C.6: EM 24
73	base/slipped	M/2	Tall Jawa	Daviau n.d.: Fig. 2.30: 4
II-N/1–7. Possible pillar figurines				
74	head with shawl	N/1	Tall al-Umayri	Dabrowski 1997: Figs. 18: 11–12
75	head with shawl	N/2a	el-Yadoudah	Franken and Abujaber 1989: Fig. C.5: EM 13/2
76	head with shawl	N/2b	Sahab	'Amr 1980: 73; fig. 55
77	head with tenon	N/3a	Sahab	'Amr 1980: Fig. 77
78	head, shoulders	N/3b	'Amman	Dornemann 1983: Fig. 89: 2
79	head with tenon	N/3c	'Amman	'Amr 1980: Fig. 78
80	head, shawl and knob	N/4	Tall al-'Umayri	Dabrowski 1997: Figs. 18.6–7
81	head, headband	N/5	Sahab	'Amr 1980: Fig. 80
82	holds disc	N/6a	Jalul	Yunker 1996: Pl. 13
83	torso w. disc	N/6b	'Amman	Dornemann 1983: Pl. 89: 3
84	torso w. disc	N/6b	Hesban	'Amr 1980: Fig. 88
85	hands w. disc	N/6c	'Amman	Dornemann 1983: Fig. 87: 6
86	hands w. disc	N/6c	'Amman	Dornemann 1983: Fig. 87: 7
87	hands w. harp	N/7	'Amman	Koutsoukou and Najjar 1997: Fig. 2
II-P/1. Pillar with naked female in relief				
88	head missing	P/1	Tall Jawa	Daviau n.d.: Fig. 2.31: 1
II-Q/1. Unidentified female head				
89	damaged features	Q/1	'Amman	Momani and Koutsoukou 1997: Fig. 15
90	damaged protome(?)	Q/2	'Amman	Momani and Koutsoukou 1997: Fig. 16
91	crude features	Q/3	Jalul	Ibach 1978: Pl. XVIII: B (1)
III-R/1–4. Generic anthropomorphic figures				
92	head, pellet eyes	R/1	Tall al-'Umayri	Dabrowski 1997: Figs. 18.8–9
93	head, pellet eyes	R/2	Tall al-'Umayri	Dabrowski 1997: Fig. 18. 10
94	protome?	R/3	el-Yadoudah	Franken and Abujaber 1989: Fig. C.5: EM 21/9
95	drilled eyes	R/4	el-Yadoudah	Franken and Abujaber 1989: Fig. C.5: EM 11/1
III-S/1–4; T/1. Miscellaneous stone heads and torso				
96	head	S/1	Abu 'Alanda	Abou Assaf 1980: Pl. VIII; Head XIII
97	head	S/2	Abu 'Alanda	Abou Assaf 1980: Pl. IX; Head XIV
98	head	S/3	Abu 'Alanda	Abou Assaf 1980: Pl. IX; Head XV
99	head	S/4	Abu 'Alanda	Abou Assaf 1980: Pl. IX; Head XIV

Table 2: Catalogue of Anthropomorphic Figurines from the area of 'Amman (*cont.*)

#	Comments	Type	Site	Reference
100	torso	T/1	'Amman	Zayadine et al. 1989: Pl. LI
IV. Damaged ceramic figurines—unidentifiable				
101	head, neck		Hesban	'Amr 1980: Pl. 27: 2
102	head, neck		Jalul Survey	'Amr 1980: Pl. 27: 4
103	head		Jalul Survey	Ibach 1978: Pl. XVIII: B (3)
104	leg of horse rider(?)		'Amman	Koutsoukou and Najjar 1997: Fig. 6
105	female fragment(?)		Tall al-'Umayri	Dabrowski 1998: Fig. 1, U1811
106	base/painted		Tall Jawa	Daviau, n.d.: Fig. 2.31: 2
Related figures				
A	metal, seated male (LB)		Safut	Wimmer 1987: Fig. 2
B	naked female holds 1 breast		Tall al-'Umayri	Dabrowski 1997: Figs. 18.2
C	faience amulet (Pataikos)		Tall al-'Umayri	Dabrowski 1993: Figs. 1–2
D	mould (Pataikos?)		Tall al-'Umayri	Dabrowski 1997: Figs. 18.19, 20
E	mould (Pataikos)		'Amman	Dornemann 1983: Fig. 88: 5
F	face, eye, shoulder fragments		Tall al-'Umayri	Herr et al. 1999: Fig. 17

* 'Amman=usually 'Amman Citadel; 'Amman(?)='Amman area, provenience uncertain or unknown.

** Professor 'Amr (personal communication, April 16, 2000) has kindly given permission to cite his thesis (1980) in this study.

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Mermaids and Squatting Women: Interlacing Motifs between Prehistoric Mesopotamia and Medieval Europe

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It is well known that some iconographic motifs had a very long story in the ancient Near Eastern art, as recent studies dealing in particular with the representation of kingship also have highlighted.¹ If the preservation of a motif related with kingship, or with the divine, may appear quite natural, it is quite interesting to observe the same phenomenon also with apparently secondary iconographies. In particular, we will take into consideration here two figures that are placed midway between the divine, and the human world. The inspiration to deal with them arose from a curious figure, which can be observed on medieval column capitals of French, and Spanish churches, namely a front-facing mermaid with two diverging tails, which she holds with her hands near the sides of her face (Figs. 1–2).² This figure is peculiar for three reasons: for the presence of two tails, for the strange way in which they are held, and for the circumstance that they are fish-tails, which implies that in this period, around the XII century of our era, the image of a sea creature, half woman, and half fish, had been elaborated, which was until then unknown. In fact, the most famous monsters we call “mermaids” in the ancient world, namely those who had charmed Ulysses during his wanderings in the Mediterranean after the defeat of Troy, were not sea monsters, in the Greek iconography, as is known particularly from painted pottery, and in the Roman imperial one, but rather birds of prey, with woman’s bust and head, who played the lyre.³ Still in the cathedral of Anagni, by the half of the XII century, a mermaid is represented who keeps both natures and has two tails, and two claws.⁴ Similar figures are found again in Embrun, in the XIIth century, and in Lyon in 1579.⁵ The scholars who studied this iconography in the

1. Matthiae 1989; Pinnock in press.

2. For several examples, see Leclercq-Marx 1997: Figs. 51–53, 56, 71–73, 78, 80–81, 87, 90–91, 118–119, 121–127, 130–132m 145 (from Vaprio d’Adda, Lombardy, beginning of the XIIth century, with sex particularly evident), 171–172, 174, 177, 188.

3. Leclercq-Marx 1997: 10–14, 47–53; Ewald 1998.

4. Chatel 1978: 184–186, the frescoes are dated, with many uncertainties about the precise attribution, from between 1100, and 1110.

5. Deonna 1928: 18; Leclercq-Marx 1997: 103, Fig. 56.



FIGURE 1. Two-tailed mermaid; church of Mouilins-lès-Metz (Moselle), XIIth century, Metz Museum (from Leclercq-Marx 1997: 174, Fig. 18).



FIGURE 2. Two-tailed mermaid, St. Geminiano's cathedral, Modena, 1099 (from Leclercq-Marx 1997: 185, Fig. 131)ž

medieval world proposed a derivation from Coptic art,⁶ and yet they had to refer, in order to find real examples, and to look for its origin, to the Near Eastern world.⁷

In reality, in Near Eastern art a similar iconography is apparently not attested *in se*, and yet it is quite likely that this hypothesis is basically correct, but its demonstration is not quite as simple, because, at a closer examination, it will appear that the motif does not have, in my opinion, one origin only.

One first starting point may be a text, which is very important for the reconstruction of oriental cults in the Roman imperial age, namely *De Dea Syria*, attributed to Lucian of Samosata. In his accurate description of Atargatis' sanctuary in Membij, the author maintains that he had seen in Phoenicia a figure of Dercetus, the goddess who was, according to local traditions, Semiramis' mother, represented as a mixed being, half woman, and half fish, in memory of her transformation into a fish, when she had thrown herself into the sea, after her daughter's birth. Yet, according to the same author, this was not Dercetus' usual iconography, as her statue in Membij was completely human.⁸

May one, thus, maintain that during the second century A.D. there existed in the Syrian region, or at least on the coast, a divine iconography representing a mixed being, half woman, and half fish? And if this were true, why have not one of these figures been pre-

6. 4VCSZ#+) *, #) *1bWS'Q\bfwbWe VwVbS[S[ONO^SO SR'WQZRSR'aSd`OZaSOQSOc`Sal
Q\ aRS SR'O`S^Sa\ bOM]TbS`-aSO]TQgabCZ]T;]V\ a dWw W2^]QZg^aS'(f e VS`SbVS
ZO RaQ`S'aSS[aObg^WQZg? WbWQ]\St O W^`SaaW ab S\UvS\SRPg'bVS^`Sa\ S]TOQ]ž
Q RVbZDSS'OZa] =SQS`Qž Of #++), (+*)I T]`WQ\]U O'WQO RZbS Og^`Sž#bV`S\bc`g`2žž
SdRS`S]\`bVSRsdZ^ [S\b]TbS[S[ONe Ww]\SšavžOZ

7. Deonna 1928: 19.

8. Attridge-Oden 1976: 21.



FIGURE 3. Fish-man, Khorsabad, Royal Palace, detail of relief 1 in Court VIII, Paris Louvre



FIGURE 4. Limestone statuette of a seated woman, Tello, Neo-Sumerian period.

served for us? Upon examination of the extant works of art coming from Mesopotamia, Anatolia, and Syria, dating from the third, second, and first millennia B.C., it seems quite evident that a mermaid's figure, a mixed being with the upper part of the body in the shape of a female bust, and the lower one in the shape of a fish tail, was unknown. Sometimes, in the studies of glyptic repertoires, where a few figures of half human and half fish monsters are present, the existence of both male, and female beings have been postulated, but at a closer examination, these identifications are always quite hypothetical, and are based only on some elements of the hair-dress, which are not so definite in the schematic rendering of seals.⁹ A clearer representation is to be found in the reliefs in Sargon's palace at Khorsabad/Dur Sharrukin, and it clearly belongs to a fish-man (Fig. 3).¹⁰ Therefore, Lucian's identifica-

9. Porada 1948: Pls. LIII, n. 366, p. 45; XCII, n. 634, p. 76; CXIX, nn. 785, 788, p. 96, all Late Assyrian or Late Babylonian, with the exception of n. 366, Old Babylonian. Collon 1986: 45, C.17, these are beings in all of which the human part is definitely secondary as compared with the animal one, and only in se

al 119 the identification with a female character is proposed,

because the head-dress apparently is larger than in the other specimens, but the figure might also have a beard: *ibid.*, n. 119 = BM93522, Pl. XII. See also Huxley 2000: 22, and Green 1986: 27, about the interpretation of *kuliltu* as "fish-woman", and the possible presence of couples of fish-men, and fish-women in Late Assyrian to Late Babylonian glyptics.

10. Matthiae 1996a: Fig. 6.5. This relief also allows to relate this being with the sea. In fact, it never appears in riverine landscapes, even when fish, or crabs are represented in details: s. Matthiae 1996a: Figs. 9.3–4, from the South-West Palace of Assurbanipal at Nineveh.



FIGURE 5. Bronze figurine of a naked woman, Eshnunna, OSoof Shu-Sin's temple, XIXth century B.C., Baghdad Iraq Museum, IM 20631 = As 33: 322.



FIGURE 6. Terra-cotta recumbent figurines, second century A.D. Paris Louvre Museum.

tion must refer to something different. Our proposal is that there was a misunderstanding of another well known iconographic type, quite frequent in the Parthian-Sasanian period, contemporary with the repertories of the sanctuary at Membij, but whose origin goes back to the third millennium B.C.

In the Neo-Sumerian period, a small statue of a lady of the court of Lagash, identified with a wife of Gudea's, represented the woman in a very peculiar attitude (Fig. 4): she was not standing, nor seated, but rather crouching, on a kind of stool, with both her legs placed on one side,¹¹ an attitude previously attested only for a bronze statue with inscription of king Naram-Sin of Akkad.¹²

This peculiar way of representing the human figure did not have a large fortune as concerns the number of specimens, but it had a long story: in the Old Babylonian period a

11. Parrot 1948: Fig. 39b.

12. Moortgat-Correns 1989: 125, n. 1, from Dohuk.

bronze figurine reproduced a naked woman (Fig. 5), with her legs turned to the side, and her feet joined, but with fingers spread apart. This is not the place to linger on the problem of the interpretation of naked female figures, so peculiar, and frequent in near Eastern handicraft. We can, however recall that, with some differences, they can generally speaking be related with some aspects of the cult for the great female deities, and, in particular, in Syria, with the great goddess, of the kind of Ishtar, whose cult was still practised at the beginning of our era, with the Atargatis adored at Membij.

As already said, precisely in this more recent phase the representation of the recumbent figure starts, with a relatively large number of attestations, and with some variants: the base type is a woman lying on her left side, with her legs, and feet united, and her feet stretched like a fan. The most relevant group of images of this kind was found at Seleukia, on the Tigris, and here several variants of the model are present (Fig. 6a-b). The naked, or half-dressed figure has been identified precisely with the great goddess, also due to the occasional presence of a moon crescent on the personage's forehead (Fig. 6c),¹³ or by others with a deified real woman; in our opinion, this second proposal should be rejected. The type was considered of Greek origin, for the apparent lack of Mesopotamian prototypes.

In contrast to this and in the light of what has been mentioned before, our proposal is, that the recumbent image has its origin in the crouching female figures, with their legs on one side, whose prototypes have been identified in the neo-Sumerian, and Old Babylonian periods, with an unknown passage, which should possibly be sought for in metallic specimens now lost,¹⁴ on the base of the first known figure of this kind, namely the bronze statue with the inscription of Naram-Sin of Akkad, and of the Old Babylonian statuette. We have already proposed elsewhere that the group of neo-Sumerian statuettes, of the kind of the "femme à l'écharpe", to which the figure of Gudea's wife also belongs, represents relevant ladies of the court of Lagash, strongly related with priesthood, and in particular with the sanctuary of Nanna/Sîn at Ur.¹⁵ In the Old Babylonian period, this type was used in order to represent some personages, not belonging to the court, in this instance, but rather human figures, always related to the sphere of cult, probably of a female deity, of Ishtar's kind, and with this value, the iconography was kept until the Hellenistic, and Parthian-Sasanian periods, with the evolution of the recumbent type. It is possible that, in the presence of figures whose lower part of the body was particularly schematic, and under the influence of the myth of Dercetus, Semiramis' mother, who was transformed into a fish after her daughter's birth, the recumbent might have been interpreted *tout-court* as a fish-woman, a mermaid.

This is, therefore, in our opinion, the possible explanation for the creation of the figure of the mermaid, half woman, and half fish. But this hypothesis does not explain the elaboration of the iconography with two diverging tails, provided that this too had its origin in the ancient Near East. In fact, we believe that this was precisely the case, and, at this moment, another very ancient iconographic type must be taken into consideration.

Already in the wall stuccoes of the Neolithic period at Çatal Hüyük a female figure appears (Fig. 7): it is quite schematic, naked, and her arms and legs are stretched outwards. Sometimes placed over a bull's head, it has been considered a woman in labour, or rather an

13. van Ingen 1939: 21. The finding of several figures of this kind in the so-called Block B of Seleucia allowed to contrast the hypothesis that they had an exclusive funerary purpose. Really, they apparently have the same quite general functions as the naked female clay figures holding their breasts.

14. Matthiae 1994: 46–60.

15. Pinnock 1998.

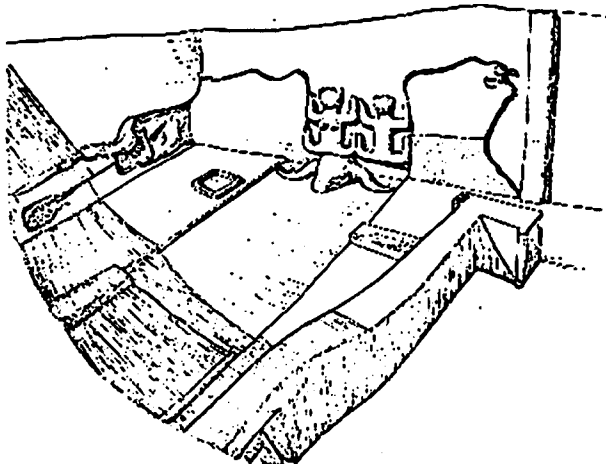


FIGURE 7. Wall decoration, Çatal Hüyük, Shrine VII, Neolithic period (from de Jesus 1995: 129, Fig. 1).

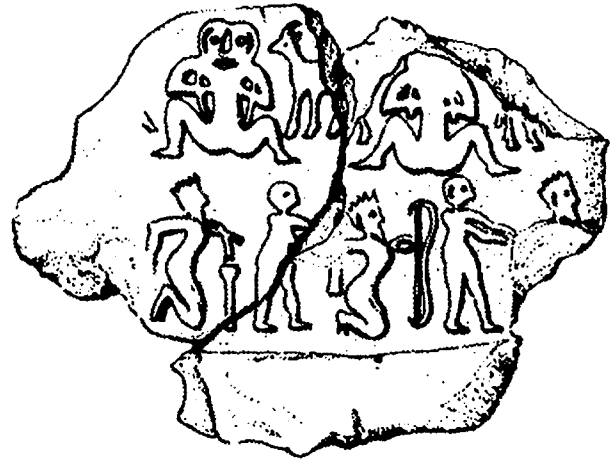


FIGURE 8. Seal impression, Uruk W.21004, Uruk period (from Mazzoni 1992: AZ XLII, 1).

incarnation of the female principle of fertility.¹⁶ This peculiar iconographic type had a very large fortune,¹⁷ until it suffered a crisis after the beginning of the second millennium B.C.

In glyptics, particularly of the Uruk period, the figure, which sometimes has a monstrous head (Figs. 8–9),¹⁸ is prevalently related to domestic animals, and with contexts which seem to have strong connections with fertility.¹⁹ Within the general picture of the evolution of the type, one may perhaps distinguish two variants: a less frequent one, in which one may identify with relative certainty a woman in labour, for the almost seated position, and for the presence, sometimes, of the child, or rather of its head, coming out from the vagina; the second, and more frequent one, with the woman alone, with outstretched legs, sometimes in the variant, in which she holds her legs wide apart with her hands; this should be related only with fertility, and more specifically with the sexual act, as appear evident, for instance, from a seal from Luristan, where two personages with outstretched legs seem on the point to perform a sexual act.²⁰

The figure of the woman with more or less outstretched legs, which she sometimes holds apart with her hands, appears in the glyptic art of the proto-historic, and Early Dynastic periods from Susa, Ur, and Uruk.²¹ After the end of the Early Dynastic period this iconographic type apparently disappeared in Mesopotamia, but it was preserved, albeit sporadically, in Syria, still at the beginning of the II millennium B.C., in seals from Marash, and Byblos.²²

In Mesopotamia, the woman with outstretched legs, in the more lascivious variant, in which she holds her legs apart with her hands, appears again at Assur, in one of the pierced lead plaques, found in the deposit of Ishtar's temple, of Tukulti-Ninurta I's age, that is in a strongly allusive context, related with aspects of the cult for that goddess: we can recall, in

16. De Jesus 1985.

17. Mazzoni 1992: 34–42; *Zaš* VI, A17; XXXIX, B160; XLII, 1–8.

18. Amiet 1980: N. 1600, Pl. 120.

19. Amiet 1972: 99; n. 616 = Sb 1954, pl. 14, of the phase of Uruk VI–VI. Mazzoni 1992: 36–37.

20. Mazzoni 1992: 35; Pinnock 1995.

21. Amiet 1972: 99, nn. 616–618, pl. 14, Uruk XVI–VI; Amiet 1980: nn. 258, pl. 15, from Susa; 846–847, pl. 63, from Ur, SIS 4–5; 922, pl. 69, from Nippur, Early Dynastic period; 1541, pl. 115, from Susa; 1595, pl. 119, Erlenmeyer collection; 1600, pl. 120, from Uruk. Mazzoni 1992: 34–42.

22. Mazzoni 1992: 38–39.



FIGURE 9. Seal impression, Hassek Hüyük Hsk F.81 1, Uruk period (from Mazzoni 1992: Pl. XXXIX, B16).



FIGURE 10. Bronze figurine, Luristan, Rietberg Collection (from Goldman 1960: Pl. I, 1).

fact, that the other lead plaques found there represent sexual acts, and that in the same deposit several fritte reproductions of male and female sexual organs were also found.²³

Thus, in the pre-classical near Eastern repertoires two iconographies have been singled out, which bear individually some elements of contact with the type developed in the Romanic religious art, specially in France, but also in Spain. On the one hand, the image of the recumbent woman may have given origin to the iconography of a mixed being, with the lower body in the shape of a fish-tail; on the other hand, the type of a woman, who holds her legs apart, may have inspired the idea of the two peculiar divergent tails.

These elements are enough, in our opinion, to lead to attribute a near Eastern origin to the motif of the mermaid with two tails, but again in the Near East there is at least one specimen in which this iconography appears completely accomplished: a pin-head from Luristan, in the Rietberg Collection in Zurich (Fig. 10), presents precisely this peculiar iconography, characterized, moreover, by a Hathoric head-dress, typical of the female figures of the so-called Astarte-plaques, an element which leads to relate this image with the goddess.²⁴

In order to explain the origin of this bronze object, on the one hand, reference was made to the "Ladies of the animals", with their bodies melted with the animals they dominate,²⁵ well attested in the Luristan standards, and, on the other hand, to a stele of the half of the II millennium B.C. from Susa, which apparently represents a mixed being (Fig. 11), of whom it is difficult to ascertain the sex, who has a fish tail, definitely separated in two halves, albeit the extremities are not separated in order to form two distinct tails.²⁶ On the other hand, the art of Luristan preserves also the iconography of the female character with outstretched legs, as a woman in labour, with the child's head appearing between the legs (Fig. 12).²⁷

Thus, it was in the Near East, possibly in Luristan, that the woman with outstretched legs became a mermaid with two tails. As a working hypothesis, on the base of the material

23. Andrae 1935: Taf. 45, k-l, Ass. 8253 and 19901; Pinnock 1995: 2521–2531.

24. Goldman 1960: 53–57.

25. Matthiae 1996b: 199, 201.

26. Goldman 1960: 55; if it were a female, this might be one of the first attestations of a mermaid, and it is also interesting to point out that the character holds a double rope with her/his hands against the bosom, another element which might have led to the final iconography we are dealing with now. See also Toscanne 1911.

27. Matthiae, 1996b: 200. It is quite interesting that on a column capital at Rock, Worcestershire, of the mid-XIIth century A.D., a two-tailed mermaid has, in correspondence with the sex, which is not marked, a globe, that peculiarly reminds one of the head of a child.

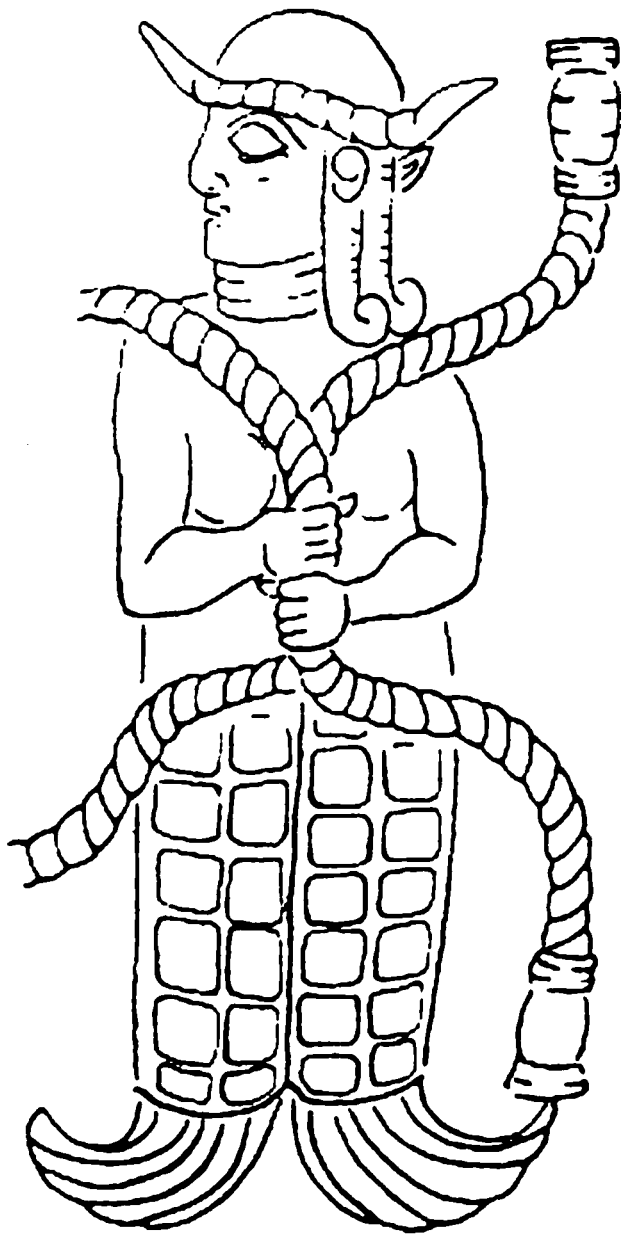


FIGURE 11. Detail of the Serpents Stela, Susa, mid-second millennium B.C. (T) [Goldman ' # + (" f z



FIGURE 12. Bronze disc-headed pin, Luristan, Iron III, Paris Louvre Museum, AO 25006.

actually at hand, we can perhaps single out in Syrian art the moment of passage between the two iconographies, for example with a seal of the Middle Syrian period, in the Walters Art Gallery, where two women, sitting with outstretched legs, hold in their hands unidentified objects, possibly flowers, or daggers,²⁸ an iconography which might easily be misread, having in one's mind the image of the woman holding her legs, leading to fuse the outstretched limbs with the objects held.

In conclusion, we are proposing that we have here a transversal iconography, which, preserved and modified during the centuries, fused and confused female figures, which were not

28. Gordon 1939: 6, 22, n. 60 = WAG 42.415, dated from between 1600 and 1300 B.C.



FIGURE 13. Bronze vase handle from Roman Gaul (from Boucher 1976).

necessarily the same, though they were generally speaking related with the same sphere of fertility cults. The primary image is certainly the woman with outstretched legs, which already presents a twofold meaning, one lascivious, and one maternal. By means of successive transformations, and probably under the influx of the late myth of Semiramis' birth, the iconography of the mermaid was elaborated, on the one hand, possibly with a misunderstanding of the recumbent figure, and, on the other hand, transforming the women with outstretched legs into two-tailed mermaids, the iconographic motif which will appear again in the medieval art of France. The passage may have been a direct, and contemporary one, and may have taken place when, particularly thanks to the work of the abbot Suger of St Denis, several iconographies and Oriental motifs were directly copied in the Holy Land, before starting the elaboration of the sculptured decoration of that abbey.²⁹ On the other hand, variants of the iconography we are taking into consideration were identified also in Greek classical art, for instance in an *askos* which, though reproducing the typical Greek mermaid, with bird's body, presents her in an attitude quite similar to that of the recumbent.³⁰ More interesting still is, in our opinion, the production of bronze vase handles in Roman Gaul, in the second century A.D., closer in date to the Romanic decorations. These handles are characterized by a rich decoration, centred on a female bust, with two strongly elaborated side elements (Fig. 13), with motifs related with fertility, which recall, in their general structure, the iconography here taken into consideration,³¹ in particular for some specimens which have, among the side elements, also two dolphins. These may have been intermediate steps for the transmission of the iconographic type to the West.³²

Therefore we believe that although it was certainly a minor type, in the iconography of the woman with outstretched legs one may single out a figurative type among the ancient

29. Mâle 1966: 39–40 for the influences of ancient Oriental art on Syriac Canons; 151–185 for Suger's work in general; 340–359.

30. Hofstetter 1990: 250–251, O52, Taf. 30, and W5, Taf. 31.

31. Boucher 1976: 196–197, 215, 248–249, pl. 59, n. 283; Boucher 1985: 73–78, Fig. 9.

Near Eastern ones, which was created in the Uruk period, and which reached, through successive transformations, the medieval European religious art. Thus the mythical monsters who charmed Ulysses, half woman and half bird of prey, were substituted with the more reassuring mermaid, half woman and half fish, who became the protagonist of melancholic myths, legends, and fairy tales.

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32. Another possible path for the transmission of Oriental iconographies to the West is to be found in the decoration of Armenian churches, for the period between the IX and the XIII centuries: for instance, a motif is frequent, which represents a cross, with two floral elements at the bottom, which go up elaborately, looking like fish-tails: Azarian 1970: Figs. 14 (IX century), 19 (1041), 25–26 (XIII century), and *passim*. This happens only in these free-standing stelae (the so-called Khatchkar monuments), not in the representations on the façades of churches, where crosses are represented in the traditional way. Other Oriental motifs can be found in the decorations of the outer façades: s., e.g., the decoration of the Aght'amar complex, an island of the Van Lake, with the motif of the sacred tree, among others: Vahramian 1974, or the saint represented in the same centre as a master of animals, with two lions: Gandolfo 1982: Fig. 101 (church of S. Xac).

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Divine Symbols or Apotropaic Animals? A Contextual Approach to Animals in Babylon

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Abstract

The images of the lion, the bull, and *mušhuššu* are found on the glazed-brick walls of the Processional Way and Ishtar Gate in Babylon. It has been suggested that the function of these animals is to represent the presence of particular deities: the lion is identified with the goddess Ištar, the bull with the storm god Adad, and *mušhuššu* with Marduk, the chief god of Babylon. The proposed paper uses a theoretical framework which has not been greatly emphasised in previous studies in order to explain the symbolism of these animals from their context—in which specific features or characteristics of the animals are stressed—and to suggest an alternative interpretation of their function.

Images of the lion, the bull, and *mušhuššu* are found on the glazed-brick walls of the Processional Way and on the Ištar Gate in Babylon. Some scholars have suggested that the function of these animals is to represent the presence of specific deities: *mušhuššu* is identified with Marduk, the chief god of Babylon, the bull with the storm god Adad, and the lion with the goddess Ištar.¹ Others, however, have suggested that the function of these animals is ‘apotropaic’: to keep evil forces out.² Concerning the first suggestion, it is indeed true that these three animals commonly appear in iconography in association with deities. Their symbolic associations can be seen when the animals are depicted in the company of gods and goddesses who are represented in an anthropomorphic form. The three animals on the glazed-brick walls in Babylon, however, do not accompany divine figures; they are on their own. They are all depicted in the act of moving forward. The *mušhuššu*, whose narrow tongue is protruding from his mouth, stands with his head and tail raised (Fig. 1). The bull’s head is lowered slightly, as though he is about to gore an adversary (Fig. 2). The lion’s mouth is wide open, so that his fangs are visible and emphasize his fierce nature (Fig. 3).

An approach by means of ‘context’

It is not easy to establish what such antiquities were originally intended to convey. We must recognize our tendency to interpret an object by applying criteria that reflect our own era and our own assumptions about cultural phenomena. It is clearly risky to impose externally derived concepts of rationality on objects that belong to a totally different cultural context, and I believe it is important that any interpretation of ‘culture’ should be based

1. Koldewey 1914: 46. His view has been followed by many scholars.

2. Lambert 1985: 87–88; Wiggermann, RIA 8: 460, under *mušhuššu*, §4.

FIGURE 1. *mušhuššu* in glazed bricks. PKG 18: Pl.XXVI.

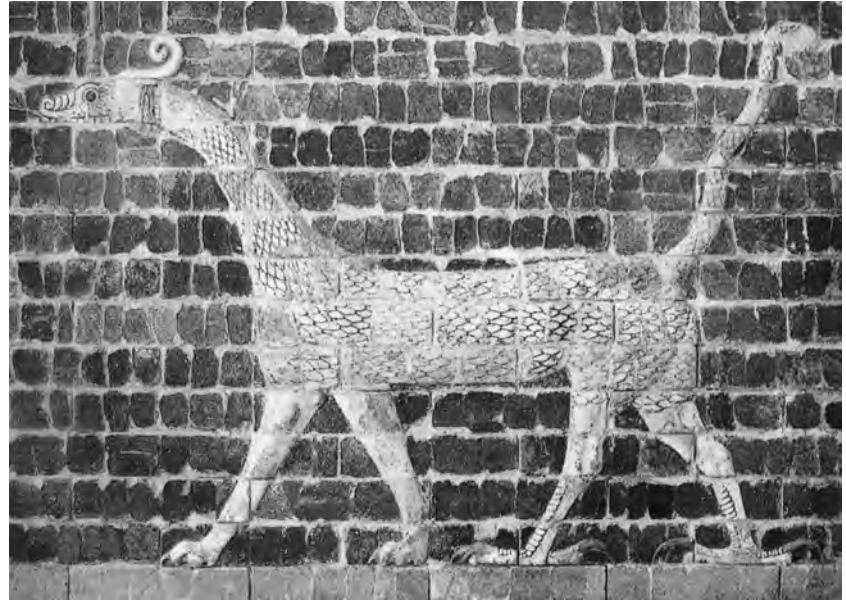


FIGURE 2. Bull in glazed bricks. L. Jakob-Rost et al. 1987: 117, Abb. 139. Das Vorderasiatische Museum. Staatliche Museen zu Berlin.



primarily on an assessment of the internal relationships revealed by the original contexts. Ian Hodder has defined the term ‘contextual’ as the placing of items ‘with their texts’ (context). The general idea here is that ‘context’ refers to those parts of a written document which come immediately before and after a particular passage. They are so closely connected that the meaning of the text is not clear without them.³

Archaeologists use the term ‘context’ in a variety of ways. It usually refers to the nature and function of the spot where an object was found, and the common factor is the connection of objects in a specific situation or group of situations. The significance of objects can only be

3. Hodder 1986: 121–155.

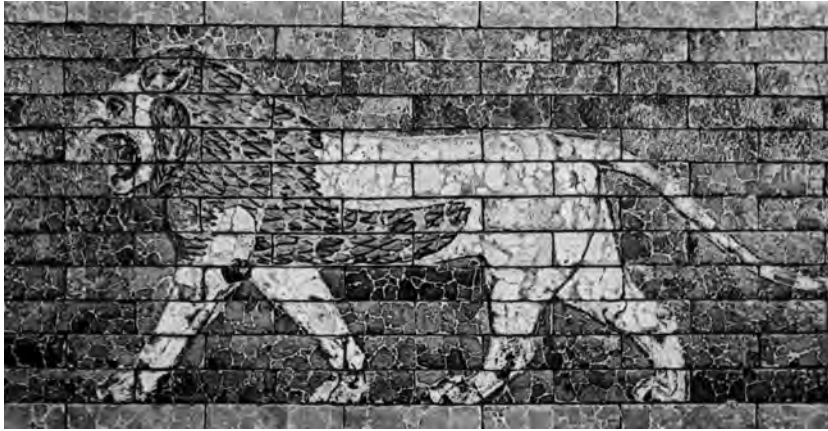


FIGURE 3. Lion in glazed bricks. PKG 18: Pl. XXIV.



FIGURE 4. The Istar Gate. Pritchard 1969: Fig 760. The ancient Near East in pictures relating to the Old testament. Princeton.

established by analyzing the archaeological context in which they were used. This context provides clues to an object's meaning or function, and the object is then 'empowered' to communicate with us; it is no longer mute. I should like to use the term 'context' in the wider sense of the original definition in this paper, so that it refers not only to the functional aspect of the place where the object was found, but also to any other indications or subject matter associated with the object in question.

The original locus of the lion in Babylon was on the walls along the Processional Way, and that of the bull and *mušhuššu* was on the Istar Gate (Fig. 4). The Processional Way runs

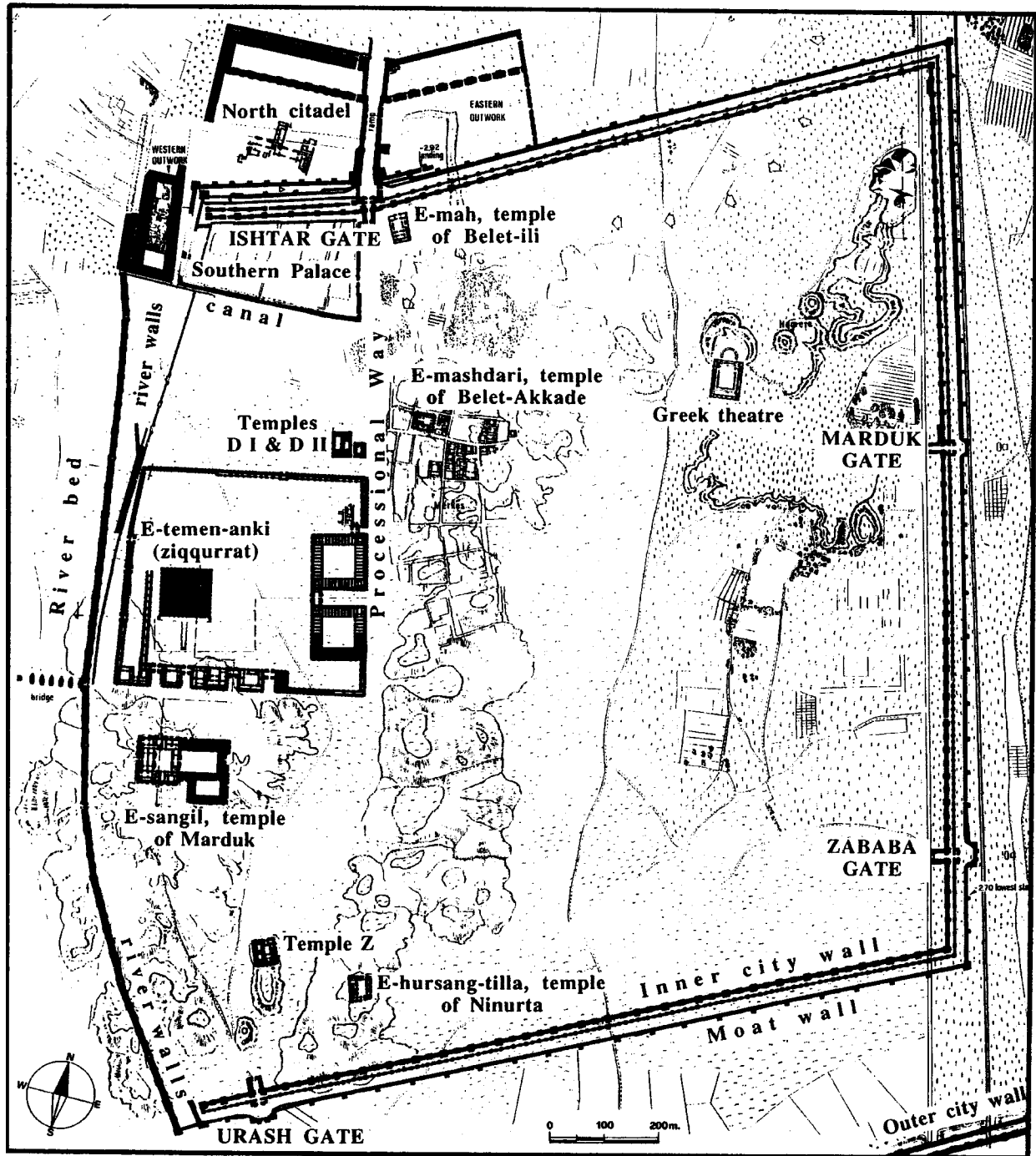


FIGURE 5. > ap of Babylon. Bergamini, G. 1977. Levels of Babylon reconsidered. Mesopotamia 12: 111–152, Pl. 1.

along the eastern side of the Southern Palace and leads through the Ištar Gate to a special festival house: *bīt akīti*. The building of the street was completed by Nebuchadnezzar II (605–562 B.C.). The level on which the Ištar Gate stood was repeatedly raised, causing the lower part of the gate structure to disappear below the surface of the gate. The lower phase of the gate is decorated with figures of the bull and *mušhuššu* moulded in relief on unglazed bricks. This phase consists of the nine lower rows, in which the figures of the two animals

are arranged horizontally; bulls and *mušḫuššu* do not appear in the same horizontal row. Koldewey has noted that the bulls in the ninth row from the bottom were more carefully executed than those of the lower rows,⁴ for some reason unknown to us. Above this phase are two rows of bulls and *mušḫuššu* represented on flat glazed brick. On the last and top phase, glazed figures of the animals are moulded in relief. It used to stand 15 metres above the surrounding area and has now been reconstructed in the Vorderasiatisches Museum in Berlin. Nebuchadnezzar II recorded his construction of the gate as follows:

“I pulled down these gates, and next to the water I laid new foundations with pitch and fired bricks. With bright-blue bricks, on which bulls and *mušḫuššu* were depicted, I had them skillfully built.”⁵

The king also flanked the gates with bulls and *mušḫuššu* cast in bronze:

“At the sides of its gates, I set up fierce bronze bulls and savage *mušḫuššu*.”⁶

The Processional Way was constructed by Nebuchadnezzar II for the god Marduk to link his temple Esagila and the *Akītu* house. The king recorded:

“At *aya ibur šāpūm*, the Street of Babylon, I added a canal bridge and made the way broad for the procession of the great lord Marduk.”⁷

The part which runs from the bank of the Euphrates to Esagila was sometimes referred to as ‘the procession road for the great son of Marduk, Nabu’, and the northern part, from Esagila to the Iṣtar Gate, was called ‘the Procession Way of Marduk’, along which images of the gods Nabu and Marduk were drawn.⁸ The centre of the roadway was paved with limestone flags measuring 1.05 x 1.05 m, on either side of which were slabs of red breccia veined with white. The gaps between the limestone slabs were filled in with asphalt, and on the edge of each slab was an inscription recording the name of the king and his deed of constructing the street for the procession of the god Marduk.⁹

The Procession Way slopes gently upwards as it approaches the Iṣtar Gate from the north (Fig. 5). The roadway was bordered with high walls decorated with lions striding to the right or to the left depending on whether they were represented on the eastern or the western wall respectively. It should be noted that this characteristic architectural feature was observed only in the part of the Processional Way that was immediately outside the city wall leading to the Iṣtar Gate.¹⁰ The high walls decorated with a row of striding lions in glazed brick flanking the Processional Way would only have been seen before entering the Iṣtar Gate to the inner city of Babylon. Thus, both the gate and the Processional Way leading to the gate are an important point of entry to the city, an area where the internal sphere meets the external one. The occurrence of the lion, the bull and *mušḫuššu* at this particular locus, and in this architectural context, explains the animals’ symbolic functions. In fact, the history of these three animals occurring at doorways, the junction between the external and internal, may go back to as far as the late fourth and the third millennia.

4. Koldewey 1914: 40–41.

5. Langdon 1905: Nebuchadnezzar XV v 64–vi 7; translation after Lambert 1985: 87.

6. Langdon 1905: Nebuchadnezzar XV vi 16–18; translation after Lambert 1985: 87.

7. Keilschriftliche Bibliothek 61 iii 2; Koldewey 1914: 51.

8. Langdon 1912: 299, 51: 61, 166 vi 61.

9. Cf. Koldewey 1914: 25.

10. I am most grateful to Dr J. Oates for drawing my attention to this particular feature.

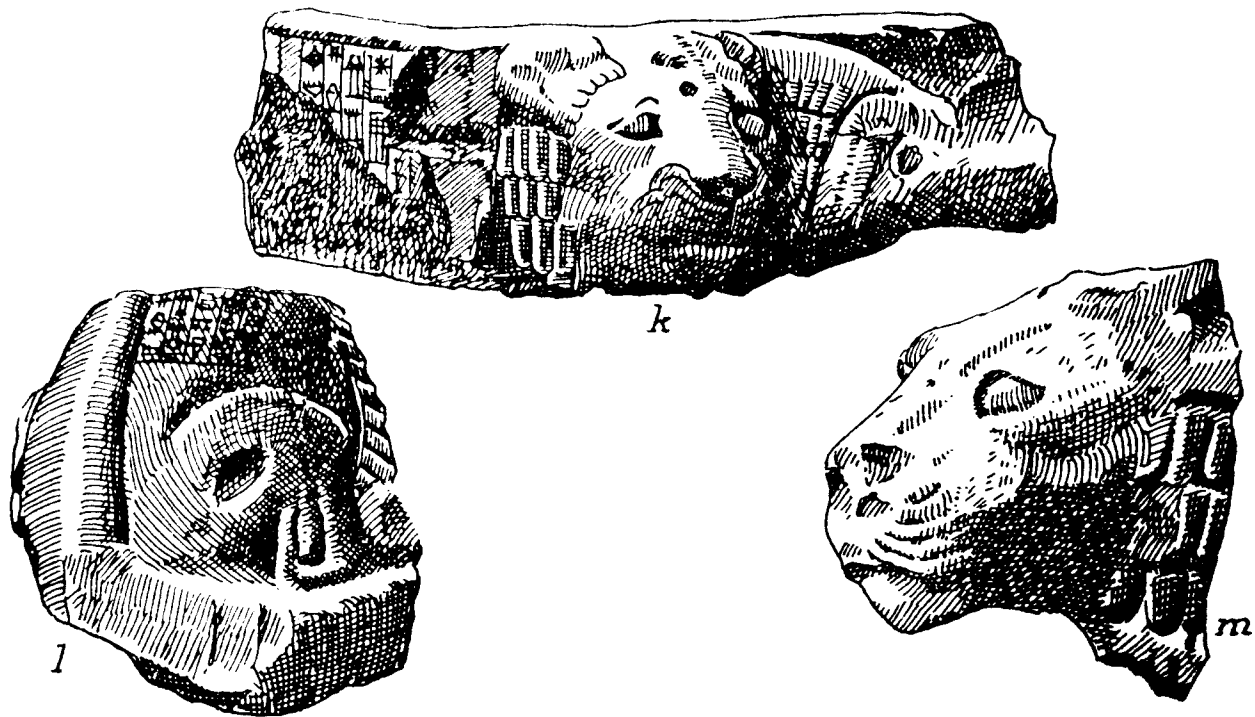


FIGURE 6. Lion heads from Lagaš, ca. 2150 B.C. Parrot 1948: Pl. 42–k, l, m.

History of animals occurring at doorways

The earliest textual evidence goes back to the Early Dynastic period in Lagaš. Enanatum I recorded that he had made lions/dogs (ur) of Halub-wood after he had finished building and roofing the Éninnu Temple for the god Ningirsu, and these animals are said to have functioned as the ‘door keeper’:¹¹

“He (Enanatum I) has let the lions/dogs of Halub-wood sit there as the door keeper.”

(ur.ha.lu.úb ì.dug.sè mu.na.dúr.durún.na[.a])¹²

On Gudea Cylinder A, all three animals are among those decorating the entrance to the Éninnu Temple:

“The locks of the temple doors had ‘bisons(?)’ (BAD) on them, its door-pivots had ‘lions’ (ur.maḥ), from their bolts ‘womb snakes’ (mus.sà.tùr) and ‘furious snakes’ (mus.huš) hissed at a ‘wild bull’ (am), ‘young lions and panthers’ (ug nemur_x <PIRIG.TUR>-TUR.TUR) lay on the door lintels, and the shining nails of roof-beams were like a ‘dragon’ (ušum) placing its claw on someone’s chest.”¹³

It is not entirely clear whether these animals are actually statues attached to various parts of the doorway, or whether they are mentioned here as metaphoric expressions in order to emphasise particular features of each part of the doorway. If we take this descrip-

11. I am most grateful to Professor G. Selz for drawing my attention to this early evidence. He has also made me aware of a divine name, Iga-alim(a) “The Door (is) a bison”, which probably expresses a notion in which the door is decorated with bisons. It indicates that the original concept of placing animals at doorways may go back to an even earlier period.

12. Selz 1995: 225, 25; En. I 2 i 7–iii 6.

13. Gudea Cylinder A xxvi 22–29; Edzard 1997: 86.



FIGURE 7. Lion statue from Eridu, late fourth millennium B.C. Safar et al. 1981: 121.



FIGURE 8. Lion head from al-'Ubaid, ca. 2450 B.C. Hall et al. 1927: Pl. XI-5.

tion literally, the entrance to the Ûninnu Temple was extensively decorated with animal images. One of the earliest pieces of archaeological evidence for the occurrence of the lion statue at doorways is found in the text inscribed on a lion head dedicated by Gudea to the goddess Gatumdug (Fig. 6).¹⁴ The text reads: “for Gatumdug, mother of Lagaš, his lady, Gudea, ruler of Lagaš, built her House of the Shining City. It (i.e., this lion) is (part) of the door” (GIS.ig.ka[m]).¹⁵ This makes it clear that the lion statue was originally located at or attached to the doorway of the temple. Another of Gudea’s lion statues, found at Uruk, bears an inscription to Ningirsu,¹⁶ the last line of which also claims that “it is of the door” (GIS.{x}ig.kam). Gudea’s texts clearly identify the locus of the buildings where these statues were originally placed.

Numerous animal statues have been discovered by archaeological expeditions. Among them, the earliest examples come from Eridu (Fig. 7), where a complete lion statue in basalt was found outside the mound of Abu Shahrein, about 15 metres from the north-eastern side of the city wall in line with the south-eastern side of the ziggurat.¹⁷ The statue dates to the late fourth millennium. The lion sits upright on his haunches. The eyes and mouth are carved, the mane takes the form of large curls, and the carved tail, on the right side of the body, ends in a curly tip. At al-'Ubaid, four large lion heads were found in the sanctuary of the temple of Ninhursag (Fig. 8).¹⁸ Each of the heads consists of an outer mask of copper,

14. Parrot 1948, fig.42 l, m; Braun-Holzinger 1991: 325, T7.

15. Edzard 1997: 116, 11a, lines 1–9.

16. Edzard 1997: 147, 52, i 1–ii 7.

17. Safar, et al. 1981: 242–245.

18. Hall, et al. 1927: Pls. X-XI.



FIGURE 9. Bull statue from al-'Ubaid, ca. 2450 B.C. Hall et al. 1927: Pl. XXVII.



FIGURE 10. Lion statue from the Dagan Temple at Mari. Musée du Louvre. Paris.

covering a bitumen core. The eyes, teeth and tongue were made of stone and shell and attached to the bitumen. Two of the heads were found with the foreparts of the bodies still attached. These heads were buried in a row along the temple façade,¹⁹ so the excavators assumed that the lion heads with the foreparts of their bodies were flanking a doorway at the entrance to the temple.²⁰ At this same site, bull statues made of copper were also found (Fig. 9).²¹ These bulls stand with all four legs on the ground, and their heads are looking back over their shoulders. Four such bull statues were found piled in front of the wall that once formed the façade of the temple: it is thought that they were originally on the wall near the entrance.²² Further bull figures were found in copper reliefs which also decorated the temple façade as a frieze, where the animals are represented as rising from a reclining posture.²³ Similarly, lion statues made of stone were found at the Insusinak Temple in Susa,²⁴ a fragment of a stone lion comes from Aššur²⁵—the date cannot be specified but is likely to be sometime between the Akkadian and the Old Assyrian periods—and three lion heads bearing the inscriptions of Ur-Nanse were found at Lagash.²⁶ Although the exact loci of these earlier statues are not known, it is generally assumed, on the basis of the later tradition and function of statues of this type, that they were 'gate figures'.

Dating from the second millennium B.C., a pair of life-size terracotta lions has been excavated at the entrance to the temple at Tell Harmal, which itself dates from the Old Baby-

19. Hall, et al. 1927: Pl. II, P-U.

20. For a sketch reconstruction of the temple façade by Woolley, see Hall, et al. 1927: Pl. XXX-VIII.

21. Hall, et al. 1927: Pls. XXXVII-XXVIII.

22. Hall, et al. 1927: Pl. XXXVII.

23. Hall, et al. 1927: Pls. XXIX-XXX.

24. Amiet 1966: Fig. 167.

25. Andrae 1913: Abb. 146, 147.

26. Parrot 1948: Figs. 14g, 21b; RA 4, 105, Fig. 10b; Braun-Holzinger 1991: 324, T1-3.

lonian period.²⁷ Other examples in terracotta include those from Mari,²⁸ Aššur,²⁹ Susa,³⁰ and Nuzi.³¹ Examples made of stone were found at Alalah,³² Hazor,³³ Alaca Höyük,³⁴ and Hattuša.³⁵ Bronze lions with inlaid eyes have been excavated at Mari, in the Dagan Temple (Fig. 10).³⁶ Textual evidence provides the names of a pair of lions installed at the Ulmaššitum Temple in the city of Malgium by Takil-ilissu. It reads:

“(I) installed [*D*]an-*Bitim* and *Rasub-Bitim*, the lions, her envoys, that go at her side at the place of the *maqqitum* offerings of the king..”

([^dd]a-an-É ù^dra-šu-ub-É ne-ši na-aš-pa-ri-ša a-li-ku-⟨ut⟩ i-di-⟨x⟩-ša a-šar ma-aq-qí-it šar-ri).³⁷

The name of the first lion statue, *Dān-Bitim*, means ‘Strong one of the temple (lit. ‘house’)’ and the second, *Rašub-Bitim*, means ‘Terrifying one of the temple’. Further evidence comes from a lion statue found at Til-Barsip (Tell Ahmar) (Fig. 11). The statue was excavated at the site of an ancient city gate to the north-east of the tell. It bears an inscription providing the names of the two lions placed at the city gate. The inscription was carved by the Assyrian *turtānu* Šamši-ilu, who lived at the time of Shalmaneser IV. The text reads:

“The name of the first lion who stands before the gate is: *Furious storm-demon, whose onslaught is irresistible, feller of the insubordinate, who helps to achieve one’s desires*. The name of the second lion who stands before the gate is: *Repulser of battle, overwhelmer of the enemy land, who drives out evil, who brings in good*.”

(MU I-en UR.MAH šá [maḥ-rat K | iz-za-zu UD]-mu ez-zu ti-bu-⟨-šú⟩ la maḥ-ru mu-šam-qit [l]a ma-gi-ri mu-šam-šu mal lib-bi MU-šu MU II-e [UR.MAH] ša maḥ-rat K | iz-za-zu [mu]-na-kip a-nun-tú sa-pìn KUR nu-kúr-tú mu-še-š[u-ú] HUL.MEŠ mu-še-rib [S]IG₅.[ME]Š MU-šu).³⁸

These names reveal the essential nature of the lion statues. In both names, the aggressive characteristics of the statues are emphasised by expressions such as ‘fierce’, ‘irresistible onslaught’, ‘feller of the insubordinate’, ‘repulser’ and ‘overwhelmer of the enemy land’. The animals’ fierce nature effectively determines their function, which is to repel enemies. Furthermore, the statues have a beneficial function, to ‘help to achieve one’s desires’ and to ‘bring in good’. This function can be interpreted as a reflection of the desires and wishes of the people.

The names of bull statues are also recorded in an inscription carved on one of the pair of statues installed by Tiglath-pileser III at the entrance of the temple in Arslan Tash. The text reads:

27. Sumer 2: 22–30.

28. Parrot 1959: Fig.27.

29. Klengel-Brandt 1978: 102.

30. PKG 18: Fig. 285.

31. Starr 1939: 108–111.

32. PKG 18: Fig.408a.

33. PKG 18: 408b.

34. PKG 18: Fig. 337.

35. PKG 18: Fig. 336.

36. PKG 18: Fig. 168.

37. Frayne 1990: 673, ls.42–45.

38. Engel 1987: 58, ls. 21–24; the transliteration cited here is a conflation of two versions carved on the lions A and B.



FIGURE 11. Lion statue from Tell Ahmar, 9th century B.C.; 3unnensl'8ž1991H Melbourne F ni- versity excavations at Tell Ahmar: 1988 season. : \ Mesopotamian history and environment. L. De Meyer and H. Gasche, eds. l' ^p. 163–170, 7WŁ(ž



FIGURE 12. *mušhuššu* in stone relief (right). Barnett 1976: Pl. LIV.

“The name of the first bull who stands in the west is: *Furious storm-demon*, [. .], *feller of the wicked, (of the) enemy of the king*. The name of the second bull who stands in the east is: *Who gains victory for the king*, [. .], *who brings in good*.”

[M[U] GUD.A[M] *maḥ-re-e šá ina* [IM.MAR.T]U [GUB-zu] UD-mu [ez-z]u x[] a+a-bi mu-šam-qit lem-nu-ti MAN MU-šú MU II-e GUD.AM šá ina [I]M.KUR GUB-zu ka-šid er-net-ti MAN mu [] x x[] x x mu x x[] mu-še-rib MŠ.SIG₅.MEŠ MU-šú.³⁹

The names of these two bull statues are very similar to those of the lion statues from Til-Barsip. The name of the first bull emphasises its aggressive characteristics, which are directed against the king’s enemies. The name of the second bull, on the other hand, stresses its beneficial role, to bring victory to the king and to let the good things in. The function of these bull statues is almost identical with that of the lions occurring in the same architectural context. The aggressive features of the bull statues are elsewhere specified in terms of ‘goring’ and ‘trampling’. Assurbanipal refers to silver wild bulls, which he set up in the Sin Temple in order to “gore the evil doers, to trample my enemies” (*ana itkup zāmāni dāiš ajābīj[a]*),⁴⁰ and elsewhere he refers to “two wild bulls made of silver goring my enemies” (*2 rīmī kaspi munakkipu gārīja*).⁴¹

39. Thureau-Dangin 1931: 61, Fig.20; Engel 1987: 75–76, ls. 24–26.

40. Streck 1916: 172 r.55.

The statues were thus believed to permit beneficial things to enter the internal space of the city or the building, but to repel things that could be harmful. In other words, the statues stand at the junction between the external and the internal in order to act as a 'filter', to select what is appropriate to enter the internal sphere. Those things which are perceived to be evil or hostile are to be conquered at this point. It is also noteworthy that these statues are sometimes described with the divine determinative.⁴² In texts, these statues are never described as the 'statue' or 'image' (*šalmu*) of animals. They are simply referred to as the 'lion' (*nēšu*) or the 'bull' (*rīmu*). It has been argued that the relationship between 'the represented object' and 'its representational subject' is neither direct nor straightforward.⁴³ The Mesopotamian animal statues certainly emphasize the natural characteristics of each animal. However, the statues are not regarded either as exactly the same as the real animals or merely as their substitutes. They are perceived as having additional qualities that 'let good things in'.

As for *mušḫuššu*, the creature's occurrence in the same architectural context is also attested in texts as early as the late third millennium.⁴⁴ In addition to Gudea's reference to *mušḫuššu* at the entrance to the Éninnu Temple, other evidence from the Old Babylonian period comes from the Ištaran Temple in Dēr⁴⁵ and from the 'fearsome gate' in Eshnunna.⁴⁶ In the late Neo-Assyrian period, *mušḫuššu* was executed in relief on stone slabs flanking the doorways (Fig. 12).⁴⁷

Let us return to the three animals represented on the glazed-brick walls in Babylon. The Ištar Gate was called 'the goddess Ištar who repulses its onslaught' (*abullu* ^dIštar *sākipat tēbišu abul* ^diš[*tar*]).⁴⁸ It should be noted that the animal figures represented on the Ištar Gate are not lions, with which the goddess is associated, but bulls and the *mušḫuššu*, which in the divine context are normally associated with Adad and Marduk/Nabu respectively. This raises a question of why the particular animal that was associated with the goddess, and thus would be appropriate for the name of the gate, was not selected to decorate the gate itself, but rather was represented elsewhere on the Processional Way. The choice of these animals suggests that the bulls and *mušḫuššu* were represented on the gate not because of their divine associations but so that they could fulfil their apotropaic function. In fact, the reason for placing *mušḫuššu* at doorways is confirmed by Neriglissar (560–556 B.C.), one of the successors of Nebuchadnezzar II, in his inscription:

"I cast seven bronze savage *mušḫuššu* who spatter enemy and foe with deadly venom."⁴⁹

In addition, in a ritual text the creature is counted among "those that repel the evil of Ea and Marduk"⁵⁰. In the light of the long history of bulls and lions appearing as guardian figures at doorways, it is presumably this apotropaic function of the bulls and *mušḫuššu* that is emphasised on the Ištar Gate. Moreover, the name and the function of the Processional

41. Thompson 1931: Pl.15 iii 5 (Asb).

42. BiOr 18: 199, I 53–54.

43. Bailey 1996: 291–295.

44. RIA 8: 460 under *mušḫuššu* § 4.

45. TCS 3, 41: 417–418.

46. JCS 13: 76.

47. Barnett 1976: Pl. LIV.

48. Gurney 1974: 44, 52; RIA 1: 341 under Babylon § 17: var. *tabisa*. For topography of Babylon, see George 1992 and 1993.

49. VAB 4 210, i 26–27; translation after Lambert 1985: 87.

50. Wiggermann 1992: Text I 159.

Way, *aya ibur šāpûm*, must be understood correctly. The Processional Way was used for the *Akitu* festival, in which the images of the gods were carried along the street. The part flanked by high walls—on which a total of 120 lions are represented—was located outside the city wall, adjacent to the gate. The name of this street has been translated as “May the obdurate foe not stay in good health” (*a-a-i-bu-úr-šá-pu-um sūqu r[apšu]*).⁵¹ This is a curse laid on enemies. The fact that the entrance to the inner city was protected by the unique structure of defensive walls, as much as 7 metres thick on both sides of the street, indicates the nature of this part of the Processional Way as a fortified corridor extending from the Ištar Gate. The presence of the lions on glazed bricks along the walls of the Processional Way reinforces, in visual form, the apotropaic message conveyed by the name of the street. It is thus more likely that the symbolism of the three animals in this particular architectural

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Near Eastern and Egyptian Iconography for the Anthropomorphic Representation of Female Deities in Cypriote Iron Age Sanctuaries

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Abstract

Archaic and Classical anthropomorphic votive sculpture from Cypriote sanctuaries of female deities includes some figures which could represent the goddess proper. The identification of the latter, however, is often unclear and ambiguous since exclusively divine iconography and attributes are rare. This also applies to the so-called Astarte- and dea tyria gravida figurines, but not to Hathor-capitals, which all are the focus of this paper. The distribution of these types in Cypriote sanctuaries, their ways of transmission, adaptation and adaption, as well as their religious meaning and social significance will be addressed in an attempt to elucidate the question whether their appearance in Cypriote sanctuaries is due to an actual import of foreign cults or whether, and by whom, they were just adopted and adapted for Cypriote cultic needs.

Cyprus is commonly regarded as a crossroads between Orient and Occident, which is reflected, in different degrees, in its entire material culture from the very beginning of human settlement on the island. Votive sculpture from nearly 300 attested Cypriote sanctuaries of the Archaic and Classical periods shows iconographic and stylistic influences from the Aegean, Asia Minor, the Levant and Egypt.¹

While most of the anthropomorphic votive sculptures represent male or female votaries and cult participants, only some could be addressed as priests, priestesses or other cult personnel. Definite representations of deities, however, especially of goddesses, are comparatively rare and often difficult to recognise.² Thus, the so-called goddess-with-uplifted-arms, an often crudely manufactured terracotta figurine with a high “polos” and upraised arms, which originated in Late Bronze Age Crete and was dedicated in Cypriote sanctuaries from the Geometric down to the Late Archaic period, could have been meant to represent either a

1. For this general notion see contributions to the symposium on “Cyprus between Orient and Occident”. Karageorghis 1986. For the iconographic and stylistic repertoire of Archaic limestone sculpture see most recently Mylonas 1999, for terracotta sculpture the series *The Coroplastic Art of Ancient Cyprus*, vols. III–VI as listed on the second page of Karageorghis 1999.
2. This is particularly valid for the Geometric and Archaic periods, before unambiguously identifiable and standardised Greek types, such as Athena and Artemis were adopted from the fifth century B.C. onwards. For the repertoire of Archaic deity-representations see Sophocleous 1985 and Mylonas 1999. For goddess representations in the Classical period see Hermary 1982 and 1986. On the problems of distinguishing between images of votaries and gods in Cypriote limestone sculpture see e.g., Sørensen 1994.

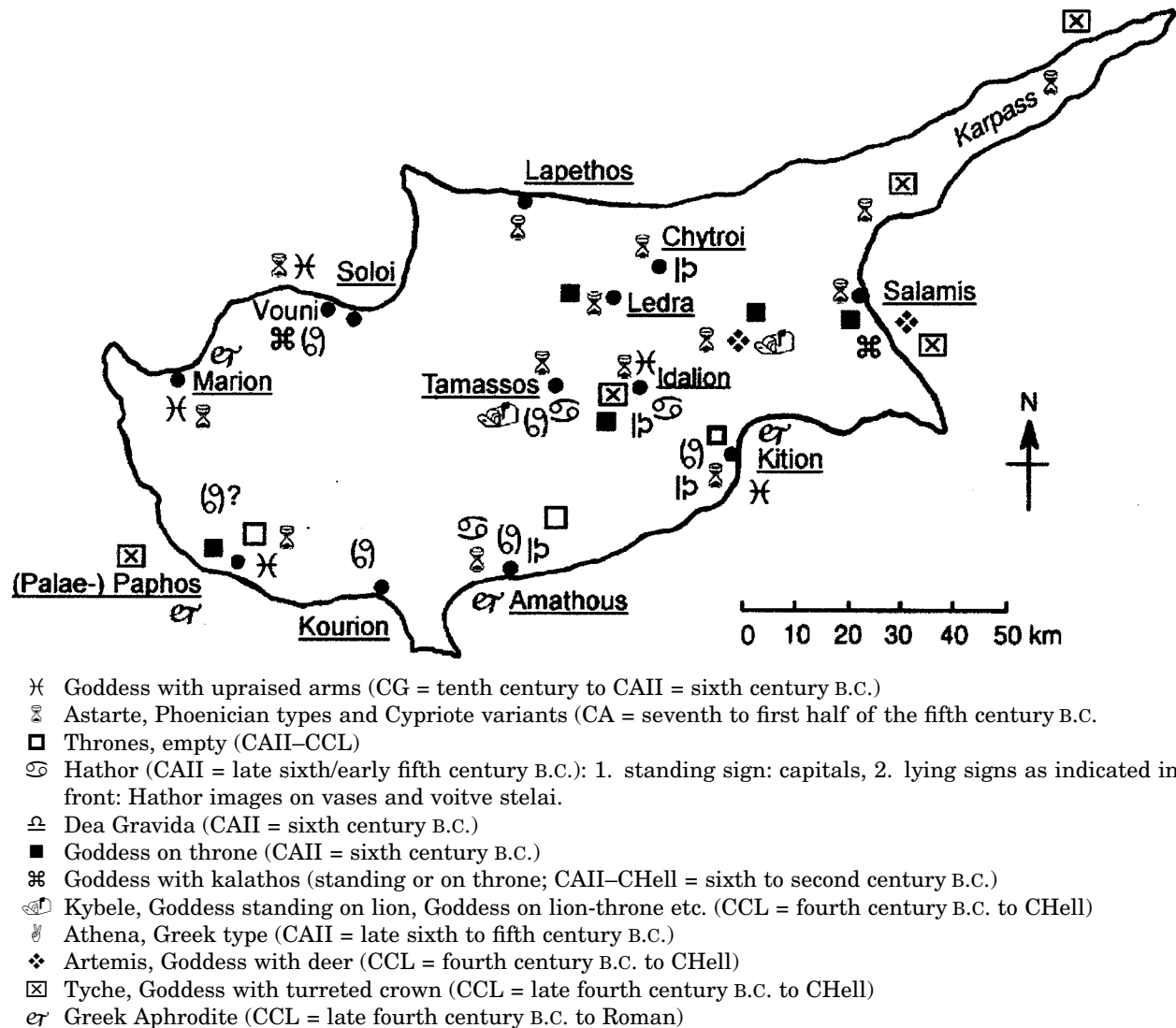


FIGURE 1. Distribution of goddess-representations in Cypriote Iron Age Sanctuaries (CA-CHell). In Ulbrich n.d.

goddess, or a priestess, or a worshipper.³ What the votary, who dedicated such a figurine, saw in it, or how visitors in the sanctuary subsequently perceived it, cannot be reconstructed anymore on the base of the available archaeological and historical evidence. The same problem also applies to female statues crowned by a kalathos, which date from the Archaic down to the Late Classical and Hellenistic periods.⁴ Only very few of all Cypriote specimens are clearly marked as goddesses, e.g., a type of Artemis with a deer on her arm or standing by her side, or an Aphrodite with a little winged Eros on her arm or shoulder.⁵ The majority of

3. For the goddess-with-uplifted arms see Karageorghis 1998a: 1–17 incl. plates. Karageorghis 1993: 58–61 with further references.

4. For this type see Hermay 1982: 167–79 incl. (Classical period). Mylonas 1999: 177–182 (Archaic period; with short discussion of interpretation of the figures). Cassimatis 1988 (Hellenistic figurines). On the interpretation as goddess or votary cf. Sørensen 1994: 84–85, 88.

5. For this Cypriote type of Artemis e.g., Cesnola 1882: 223, Fig. 213, probably similar to fragments in Monloup 1994: 81–6, of which the heads have been missing. For Aphrodite e.g., Cesnola 1991 (1878): 106.

the others could well be priestesses or votaries in cult attire, particularly the small-scale figures, e.g., from Amathous.⁶ On the other hand, the female heads with kalathos depicted on coins most certainly refer to the major goddess of the respective cities, especially since some vegetal kalathoi show intermediary stages of their development to a turreted crown, which definitely denotes a city goddess.⁷ It seems that, already in antiquity, such ambiguity of interpretation of most of those figures was not only possible, but also that it might even have been intentional. This phenomenon also applies, more or less so, to the three types of possible goddess representations, which originated in the Near East and Egypt, but were dedicated in some of the Cypriote sanctuaries during the late Archaic and Classical periods. These representations, which are the focus of this paper, include the so-called Astarte-figurines (made mostly in terracotta, but also limestone), the so-called dea gravis figurines (exclusively in terracotta), and depictions of Hathor-heads, mainly in the shape of Hathor capitals, (made of local limestone); see Figs. 2–4. While the Astarte- and dea gravis-figurines, both originating in the Near East, might denote either a goddess proper, cult personnel or votaries closely related to her cult and function, the Hathor-capitals clearly depict a goddess and refer to Egyptian prototypes, though showing Greek and Near Eastern features.

How is the appearance of those Near Eastern and Egyptianising deity representations in Cypriote sanctuaries to be interpreted? This phenomenon could either reflect the actual adoption of Near Eastern or Egyptian deities, cults and cult practice in Cyprus, or merely indicate the transmission and adaption of their original iconography in Cyprus without its initially underlying religious and cultic implications.⁸ In order to elucidate this problem, it has to be investigated:

1. For which types of Cypriote sanctuaries are these Near Eastern or Egyptianising types attested.
2. When and how these iconographic types might have been adopted, and whether local transformation of the original iconography occurred.
3. Which other deity representations come from the same sanctuaries, and who might have dedicated the Near Eastern or Egyptianising ones.
4. What these types tell us about the nature of the goddess worshipped in those Cypriote sanctuaries, about her cult and about the function and significance of those cult places.

From the early seventh century B.C. onwards, different types of the so-called Astarte-figurines were dedicated in many Cypriote sanctuaries, but also in tombs. They were particularly widespread and numerous in sanctuaries in the Eastern part of the island, mainly in urban and suburban ones, including the city-kingdoms of Kition, Amathous, Lapethos,

6. For such small figures from Amathous see e.g., Hermary 2000: xy.

7. For coins see Hermary 1982 (cf. n.4) who argues (p.171–2) that therefore all kalathos figurines should be identified as images of the goddess. Mylonas (1999: 181–2), however sees “no compelling arguments to identify such figures as goddesses” (English translation by Ulbrich), but rather as votaries of high status in society. Similarly Sørensen 1994: 88.

8. This general problem of interpretation of cultural transmission applies to any culture and has received much attention in the study of so-called “acculturation-processes”. Some aspects are discussed in Karageorghis 1986, and more recently on the conference “Transmission and Assimilation of Culture in the Near East” (TAC 2000) in Jerusalem with several papers on Cyprus. The iconographic and other indications (architecture, inscriptions) for transmission of the Near Eastern Cults of Anat and Astarte in Cyprus are also addressed and discussed shortly in Ulbrich in press: 2.



FIGURE 2. Astarte figurines from Cyprus. Images taken from Karageorghis, J. 1999 with kind permission of the author and publisher.

- 2.1: Pl. II.7: No.cat. I(iii)23. From Amathous (necropolis).
- 2.2: Pl. XVII.8 : No.cat. I(ix)173. From Achna (sanctuary).
- 2.3: Pl. XIII.5: No.cat. I(ix) 135. From Cyprus.
- 2.4: Pl. XXI.2: No. cat. II(v)21. From Idalion, temenos of Aphrodite (at Yalias-river).
- 2.5: Pl. XXVI.1: No. cat. II(v)88. From Arsos (sanctuary).
- 2.6: Pl. XXVIII.2: No. cat. II(v)115. From Arsos (sanctuary).
- 2.7: Pl. XLII.1: No. cat. V(iv)45. From Cyprus.
- 2.8: Pl. XXXIV.4: No. cat. III(i)6. From Amathous?.
- 2.9: Pl. XXXV.8: No. cat. III(i)21. From Arsos (sanctuary).

Chytroi, Idalion and Tamassos as well as some sanctuaries in the Eastern Mesoria, such as Arsos and Achna. There are just some isolated pieces from an urban sanctuary at Marion, and the famous sanctuary of Aphrodite in Paphos (cf. Fig. 2).⁹

Cypriote mostly mould-made, but also hand-made “Astarte-figurines” depict females with clearly and prominently indicated breasts and genitalia, either nude or clad in a more or less transparent and tight fitting garment, underlining their sexual features (cf. Fig. 2). The arms are either hanging down close to both sides of the body (Fig. 2.4–6), while other females clasp one (Fig. 2.8–9) or both breasts (Fig. 2.1–3) or, less often, point to the pubic triangle with one hand (Fig. 2.8). While most of them are bare-headed, only few of them wear a veil (Fig. 2.2–3), a turban (Fig. 2.8) or some sort of kalathos.¹⁰

In Cyprus and the Near East, representations of nude females, at least partly identifiable as goddesses, have been common since the third millennium B.C.¹¹ This iconography is clearly associated with the general and early concept of female fertility and sexuality, in the human as well as in the divine sphere. In the Near Eastern images, e.g., on seals and jewellery, some of those nude females show divine iconography, such as having wings or standing on animals.¹² In the Late Bronze Age, terracotta and stone statuettes of naked females were dedicated in Near Eastern, but also in Cypriote sanctuaries and tombs. They are commonly interpreted as representations of, or—at least—as referring to one of the local Great Goddesses and their aspect of fertility and sexuality. In Homeric times, perhaps already in the Late Bronze Age, the Greeks identified such goddesses in the Near East and Cyprus with Aphrodite.¹³ Unlike in the Near East, however, nude and (pseudo-)dressed females supporting their breasts disappear completely in Cypriote iconography at the end of the Bronze Age, when the above-mentioned “goddess-with-uplifted-arms” was introduced and soon became the only possible goddess-representation in Cypriote votive sculpture in sanctuaries all over the island until the end of the eighth century B.C.¹⁴ It is not before that time, that depictions of nude females were re-introduced in Cyprus, mostly on metal objects with strongly orientalising imagery.¹⁵ Slightly later, the first Near Eastern type Astarte-figurines were

9. The most recent comprehensive compilation of all types of Astarte-figurines, their distribution and possible workshops on the island is J. Karageorghis 1999 with further references. See also Sophocleous 1985: 93–106. Their distribution and amount in the individual sanctuaries will be investigated in more detail by the author, cf. Ulbrich (n.d.). For the piece of Marion, e.g., see Smith 1997: 80, Fig. 3.
10. J. Karageorghis 1999: Types I–IV. For a kalathos-type head-dress see Ohnefalsch-Richter 1893: Pl. LVI background left, which is actually only 28 cm high as shown Richter 1893: Pl. L. For handmade figures touching their breasts see Karageorghis 1998a: Types I (IV), Pl. XIV.
11. For the Near Eastern representations cf. Winter 1983: 93–201, incl. pls., for Cypriote ones see J. Karageorghis 1976: 18–121 (until end of Bronze Age).
12. Cf. Winter 1983: Figs. 134–6 (wings), Figs. 36–42 (goddess standing on animal).
13. On Bronze Age Near Eastern figurines see Winter 1983: 98–127. For “Astarte-plaques” most recently Keel and Ühlinger 1998: 97–108 with further references. See also Henshaw 1997: 277–283, particularly 277–80 (Appendix III). For Cypriote representations of the Great Goddess of Cyprus and “Aphrodite” see most recently Karageorghis 1993: 1–16 and J. Karageorghis 1976: 72–117 *passim*.
14. For the Cypriote hiatus cf. Karageorghis 1998a: 21. For introduction of goddess with uplifted arms see Karageorghis 1998a: 1–17.
15. e.g., on horse blinkers and trappings of the famous horse burials in the royal tombs of Salamis: Karageorghis 1969: 87, Fig. 23; 107 (plates without page numbers) Fig. 49; cf. also Sophocleous 1985: 79–80. On jewellery found in Late Geometric and Archaic tombs of the cemetery of Amathous: Laffineur 1992: 25, T 334/57_–_ incl. pl. VIII.

dedicated in urban and suburban Cypriote sanctuaries and necropoleis, such as Kition, Amathous and others (see above). From there, they spread quickly to other urban centres, thereby inspiring the creation of various Cypriote variants in terracotta as well as in local limestone, both from figurine to statuette size (up to ca. 40 cm). Again, most of such sculptures come from city-kingdoms and areas with a strong Phoenician presence.¹⁶

Some of the Cypriote Astarte figurines are clearly marked as votaries or priests with sacrificial animals (Fig. 2.7) or as musicians,¹⁷ while others without any clearly divine or human attributes, could also depict the goddess proper in her aspect of female sexuality and fertility. The Astarte-gesture of pressing both breasts was also adopted for statuettes otherwise fully clothed in the typical Cypriote dress and decorated with rich jewellery, their head sometimes covered by a veil (cf. Fig. 2.2–3).¹⁸ Looking rather human, such figures, nevertheless, clearly refer to the aspect of female fertility and nursing, granted by the goddess who received such a gift. Likewise, the naked Astarte-figurines embellishing the kalathos of a life-size female terracotta-statue from a temenos at Idalion, otherwise clothed in full, not transparent Cypriote dress, also indicate this particular aspect of the goddess worshipped at this site. The actual identity of the statue proper, however—goddess, priestess or worshipper?—remains ambiguous.¹⁹

Another type of a possible deity representation of Near Eastern origin in Cyprus is the so-called *dea tyria gravis*-figurine, always a small, mould-made terracotta-figurine of a pregnant seated or standing female with a curious hairdo of two braids fastened in snail-shape above the temples on either side of the head, sometimes covered by a veil. The woman can additionally have an infant in her arms or hold a tympanon (see Fig. 3.1–3).²⁰ This type was mainly found in sanctuaries of female deities and tombs at the Levantine coast and in some Cypriote sanctuaries, appearing e.g., in Tyrus between the eighth and the sixth century, in Cyprus in the 6th century.²¹ Examples were found at least in two urban sanctuaries of the city-kingdom of Kition, the principal sanctuary of Aphrodite Kypria on the acropolis of Amathous, and a single piece is attested for an urban or suburban sanctuary in Chytroi (cf. Fig. 1).²² Since the motif of a pregnant female on a throne-like seat refers to the iconography of Egyptian goddesses, which was also adopted and transformed in Phoenicia, those

16. For distribution, ateliers etc. see above incl. note 8. Variants in terracotta and stone Sophocleous 1985: 93–107; Mylonas 1999: 120–21. For the Phoenician presence in various city-kingdoms see Seibert 1976: 3–28. A compilation of epigraphic evidence for the Phoenician presence in Cyprus is collected by Szyner and Masson 1972 and Magnanini 1972: 84–134.

17. Particularly many in Lapethos, e.g., J. Karageorghis 1999: Pl. LXXX.

18. Further examples in J. Karageorghis 1999: Pls. LXXXI and LXXXII.

19. Ohnefalsch-Richter 1893: Pl. LVI, foreground right for Astarte-figurines on kalathos. Usually the kalathoi of Cypriote female figures, from figurine up to life-size, were purely vegetal, thus referring to the vegetation aspect of the goddess, but they could also be embellished by sphinxes or doves which clearly point to the divine sphere. On the different figural decorations on kalathoi see Cassimatis 1988: Pl. XIV and XV and Queyrel 1991 incl. pls.

20. For the Cypriote figurines see Sophocleous 1985: 113–116 incl. Figs. 7a, 8 and 9 (= Figure 3.1–3) and, most recently, J. Karageorghis 1999: 254–5.

21. For Near Eastern and Cypriote types, chronology and their variants see most recently J. Karageorghis 1999: 254–5 with further references. For examples for Near Eastern figurines see Winter 1983: 369–374 incl. Figs. 381–386.

22. For such figurines from Kition-Kathari: Karageorghis 1998b: 107, Pl. 5; from Kition-Kamelarga (Caubet 1986: 161–162); for *dea gravis* figurines from Kition see also Yon and Caubet 1989: 31–33. For Amathous see Hermay 2000 (not seen yet). Chytroi: unpublished. References will be given in Ulbrich (n.d.).



FIGURE 3. Dea tyria gravida figurines from Cyprus. After the drawing by Sophocleous 1985: Figs. 7.a, 8 and 9.

figurines could be interpreted as representations of a pregnant goddess. Pregnancy is referred to e.g., in Ugaritic literature and a terracotta plaque from Byblos shows the enthroned Baalat Gubal with a rather prominent lower abdomen being worshipped by a man, possibly the king.²³ Considering the small size of such terracottas, however, and the fact, that none of them shows any unambiguously divine features or attributes, they could also be representations of a human woman expecting a child, sometimes carrying one of her older children. Either way, those figurines at least refer to one important aspect of the goddess, who received such statuettes, as a guarantor of female fertility and an easy pregnancy and birth.

Only the Hathor-capitals, dedicated in Cypriote sanctuaries between the last third of the sixth and the middle of the fifth century B.C., unambiguously depict a goddess, or at least her head as *pars pro toto* (see Fig. 4.1–2). If the find context is known or can be recon-

23. Cf. Winter 1983: n.21. Also Keel and Uehlinger 1998: 435–6. For the Baalat Gubal- plaque see most recently Bonnet 1996: Pl. III.1.



FIGURE 4. Hathor-capitals from Cyprus. 4.1: Ohnefalsch-Richter 1993: Taf. CC.3. From Larnaca (Kition-Bamboula). Now Louvre. 4.2: Ohnefalsch-Richter 1993: Taf. CC.1. From Larnaca (Kition-Bamboula?). Now Berlin. 4.3: Drawing after S. Hartmann in Hermay 1985: 671, Fig. 16. From Amathous. Now Limassol.

structed, such large-scale representations were exclusively found in or at least near principal urban or suburban, including palatial sanctuaries of several Cypriote city-kingdoms, such as Amathous, Vouni (Soloi), Kition, Tamassos, Kourion and Paphos (cf. Fig. 1).²⁴

Hathor-capitals originate in Egypt where they embellished, at least since the Late Kingdom, the upper part of pillars in sanctuaries of female deities, not only Hathor.²⁵ This universal and multi-functional Egyptian goddess²⁶ was also venerated in the Near East since the Bronze Age, e.g., in Byblos, where she was assimilated to local great goddesses, such as Astarte or Anat, who had a similarly complex nature. Those goddesses adopted the iconography of Hathor, especially the head with the peculiar Hathor-hairdo or bovine ears, during the second millennium B.C. Such Hathor-heads were depicted on Near Eastern and, in the first millennium, on Phoenician jewellery, ivories and other bronze objects.²⁷ Those were also imported and imitated in Cyprus, thus probably introducing this motif on the island.²⁸ However, it is not before the last third of the sixth century, that Hathor-iconography first appears

24. A list of Cypriote Hathor capitals and their features is given in Hermay 1985: 663–670. Further fragments of from the Kourion plateau were indicated to the author during personal communication with the excavator D. Christou.

25. For Egyptian Hathor-capitals see Mercklin 1962: 5–13. Clerc 1988: 452. Haeny 1977: 1039–1041.

26. For the diverse aspects of Hathor see Daumas 1977: 1024–1033.

in Cypriote sanctuaries in such an ostentatious form as the large up to colossal Hathor-capitals produced of local limestone. They were up to two meters high and displayed on top of a free-standing pillar or column somewhere within the sacred precinct, thus serving as a cult-monument, as evident from an Amphora of the "Amathous-style" of the late sixth century B.C. On this vessel, a cultic procession towards a colossal Hathor-capital is depicted, a scene which the vase-painter might well have seen in the sanctuary of Aphrodite Kypria on the summit of the acropolis in Amathous, in the proximity of which fragments of sculpted Hathor-capitals were found.²⁹ Again, the earliest specimens of Cypriote Hathor-capitals, which are closest to the Egyptian Phoenician prototypes, come, revealingly, from Kition, the only truly Phoenician city-kingdom in Cyprus. In the sanctuary at Kition-Bamboula close to the late Archaic and Classical military harbour of the city, miniature-size one-sided Hathor-capitals moulded in terracotta were found as well, which are, so far, unique in Cyprus.³⁰ The capitals of Amathous show more Greek influence, including the addition of Greek-orientalising ornaments, such as rosettes, lotus buds, but also typically Phoenician winged solar discs, which were very popular in contemporary Cypriote sculpture, but are all completely absent on Hathor-capitals in Egypt. This clearly indicates, that they were sculpted by non-Egyptian craftsmen, either Phoenicians or Greek Cypriots.³¹ That, in addition to the early date of the Kitian capitals, their size and manufacture in Cypriote limestone as well as their miniature variants, suggests that this type and its iconography was created by Phoenicians resident in Kition and, from there, transmitted to other Cypriote city-kingdoms. All city-kingdoms where such capitals were found had close trade connections either with Kition or directly with the Levantine coast, and/or a strong Phoenician element in their population, as evident from the archaeological evidence.³² Though no actual Hathor-capitals are known from Idalion, votive-stelae with Phoenician capitals showing a Hathor head on the spandrel were excavated in the sanctuary of Aphrodite on the Eastern Acropolis by Ohnefalsch-Richter in 1893, who also recorded several Astarte figurines.³³ The dedication of stelae in sanctuaries is rather a Near Eastern custom, already in the Bronze Age, but it is also attested for other Cypriote Iron Age sanctuaries, which show strong Near Eastern affinities in the votive practice and the iconography of votive sculptures, such as the acropolis sanctuary of Amathous or the suburban sanctuary at Marcellos, just outside the northeastern city-wall of Palaepaphos.³⁴ Like the Astarte-figurines in full Cypriote dress, such stelae with vegetal capitals and small Hathor-head depictions in relief can be seen as a Cypriote variant of

27. For Hathor- iconography and its adoption in the Near East see Clerc 1988: 452. For the adoption of the Hathor-head or the typical Hathor hairdo more details are given by Borker-Klan and Calmeyer 1972–5: 148–150.

28. Examples of Hathor images in Cyprus in Hermay 1985: 676–7, 681 as well as in Sophocleous 1985: 136–7. e.g., Salamis: Hathor-head between wings depicted above a naked goddess in Karageorghis 1969: 107 (plates without pagination) Fig. 49.

29. For the vase see e.g., Hermay 1985: Fig. 26 with references to further examples of such images; on the capitals from Amathous most recently Hermay 2000: 144–9, Nos. 968–972.

30. For the two Kitian capitals see Hermay 1985: 666–676, Figs. 8–111. For the miniature size votive-stelae see Hermay 1985: 678–9, Fig. 25 and Calvet 1993: 118–120 incl. Fig. 8.

31. Cf. Hermay 1985: 682–6.

32. For Phoenician presence cf. references in note 16.

33. Masson and Hermay 1988: 3–14 incl. Pls. 1–6 (all stelai; with Hathor nos. 9 and 13). For the whole iconographic repertoire of the votive sculpture from this sanctuary, recorded by Ohnefalsch-Richter in the unpublished manuscript Idalion and Tamassos, see Ulbrich (in preparation).

Hathor-images, adaptations created in Cyprus proper, either by Phoenician or Greek Cypriot craftsmen.

It has become evident, that all possible Near Eastern and Egyptianising types of goddess-images started to appear in urban sanctuaries in the coastal city-kingdoms of Kition and Amathous where the Phoenician element in the population was strong and contacts abroad via the sea frequent. Kition, where the Near Eastern cult of Astarte and other Phoenician gods is attested epigraphically,³⁵ must have played a key-role in the introduction and dispersion of such representations of female deities. Gradually, Near Eastern iconography was adopted and transformed for the votive sculpture in urban sanctuaries of other city-kingdoms, including the inland city-kingdoms of Tamassos and Idalion, both of which also show a strong Phoenician presence because they owned and exploited the richest copper-mines of the island.

However, does such Near Eastern iconography in Cypriote votive sculpture indicate the actual import of Near Eastern or Egyptian gods, cults and beliefs in Cyprus and their adoption by all Cypriots? Does the dedication of such images reflect a change in the nature or character of the Cypriote deity who received such a sculpture? Those questions can only be answered, if the complete archaeological evidence from the respective cult places is taken into account.

In all the principal urban sanctuaries at Kition, Idalion, Tamassos and Paphos which yielded Near Eastern type deity representations, we can also find the Aegean type goddess-with-uplifted-arms, which was dedicated even earlier than but also simultaneously with Astarte- and dea-gravida-figurines, and/or even Hathor capitals. In most of these sanctuaries, also genuinely Cypriote deity representations were found, such as those with a flower carried in front of the bosom and a high kalathos decorated either with branches and floral elements or with divine symbols (see Fig. 1).³⁶ For example, both from Kition-Bamboula and the acropolis of Amathous come goddesses-with-uplifted-arms, Astarte-figurines, Hathor-capitals, the Cypriote goddess with a kalathos and, in the late Classical period in Amathous and Kition Kathari, representations of a Greek-type Aphrodite, which also appear in other Cypriote sanctuaries in this period.³⁷ Another type, which appears from the middle of the fourth century B.C., e.g., on the acropolis in Amathous, is the goddess with a turreted crown, originating in Hittite art of Asia Minor, which marks her as the city-goddess of a town. Later, this iconography was associated with Kybele and Tyche.³⁸ How are we supposed to identify and name the deities in those sanctuaries with a whole assemblage of different, chronologically partly overlapping goddess-representations? Late Classical Greek-alphabetic dedicatory inscriptions from the acropolis sanctuary in Amathous name the deity Kypria and Aphrodite Kypria.³⁹ A Phoenician dedicatory inscription from Kition-Bamboula

34. For Amathous, see Hermay 2000: xx. For Paphos see e.g., Maier and Karageorghis 1984: 186–92 incl. Figs. 173–178, with further references.

35. Cf. Guzzo Amadasi and Karageorghis 1977 *passim* (cf. index of deity names including Astarte, Resheph, Eshmoun Melqart, Baal etc.).

36. The iconographic repertoire of each sanctuary, mentioned here and in the following text is listed with references in the catalogue of Ulbrich, in preparation.

37. The iconographic repertoire of the acropolis sanctuary in Amathous is now conveniently presented in Hermay 2000. For an idea of the iconographic repertoire at Kition-Bamboula see Caubet 1986: 155–9, Calvet 1993: 120–123, and Ulbrich in press.

38. e.g., Hermay 1982: 169–173. For Kybele, the turreted crown is not attested before the Hellenistic period, as remarked by Simon 1997: 765.

identify the deity as Astarte.⁴⁰ Roman literary sources identify the deity worshipped in the sanctuary on the Eastern Acropolis of Idalion as Venus.⁴¹ However, the iconographic repertoire during the Archaic and Classical period from such sites is almost the same, including the Aegean type goddess with uplifted arms, Astarte, Hathor, sometimes Aphrodite, sometimes Tyche (cf. Fig. 1). Tyche-images were found particularly often at sanctuary sites in the northeastern part of the island, closest to Salamis, where the goddess with a turreted crown is first attested on coins of Evagoras II before the middle of the fourth century B.C.⁴² The first Greek type Aphrodite-representations, mostly in terracotta, again seem to appear at Kition in the second half of the fourth century B.C.⁴³ They soon supplant all former goddess-representations in the sanctuaries, appearing in Amathous e.g., side by side with Isis-images.⁴⁴ The iconographic repertoire in other sanctuaries narrows down on representations of Tyche, the city-goddess with her turreted crown, which is preferably depicted in large scale stone-sculpture. Thus, the deity representations rather reflect regionally different, chronologically successive but often overlapping, iconographic and stylistic influences from orient and occident. They do not necessarily indicate the worship of goddesses with different identities, though a Phoenician worshipper might well have worshipped the Cypriote Great Goddess as his Great Goddess Astarte.

Though the worship of Near Eastern deities, such as Anat, Astarte, Baal and Melqart, is attested by Phoenician dedicatory inscriptions in urban Cypriote sanctuaries,⁴⁵ the different types of goddess-representations from one and the same sanctuary do not necessarily reflect different deities. For example, the goddess Hathor is never mentioned in any inscription or literary source concerning Cyprus, but appears in large-scale votive sculpture in sanctuaries, which are epigraphically attested as belonging to Astarte or Aphrodite, such as Kition-Bamboula or the acropolis of Amathous (see above). Even though the Near Eastern iconography was initially introduced and used by travelling, later probably resident Phoenicians in Cyprus, it was soon adopted and transformed by the Cypriots themselves, but the different types must have been used and dedicated by different groups or classes of people. The small scale Astarte- and dea gravis figurines could have been mass-produced through a mould, and were iconographically appropriate dedications to a goddess who granted human female sexuality and fertility. While anyone down to the lowest classes could afford such figurines, the monumental Hathor-capitals were probably dedicated by wealthier and more powerful people, and with rather different intentions. Their sheer monumentality must have had a special connotation and significance. It is interesting and revealing, that their appearance are restricted to principal urban sanctuaries and sanctuaries in palace contexts. In both

39. For the inscriptions see: Hellmann and Hermay 1980: 259–66 no. 63. Hermay and Masson 1982: 235–240 no. 64.

40. Guzzo Amadasi and Karageorghis 1977: no. C 1. See also Caubet 1986: 158 incl. note 14.

41. The “Venus from Idalion” (Vergil, *Aenaeis* V 760) is the same goddess as the “Idalia” which has a sacred grove on the heights of Idalion (Vergil, *Aenaeis* X.51.86 and I.692). The sanctuary on the acropolis, where according the votive sculpture a city-goddess must have been worshipped from Archaic to Roman times, thus, be assigned to the goddess “Venus”.

42. Cf. Figure 1 and Hermay 1982: 169.

43. Karageorghis 1977: 164 (plates without pagination) Fig. 100 (from the Astarte and Melqart sanctuary at Kathari).

44. Aphrodite and Isis from Amathous, see Hermay 2000 or Aupert et al. 1996: 120–122.

45. Most Phoenician dedicatory inscriptions to Phoenician deities are included in Magnanini 1972: 84–134. The deities attested in Cyprus are listed in Lipinski 1995: 289 and, in more detail in Masson 1960: 137–142.

places, the kings of the Cypriote cities must have worshipped a principal and universal goddess of the city-kingdom⁴⁶ who was simultaneously war-, love- and fertility-goddess for both humans and animals, and who granted the rich harvest of the economic resources of agriculture and the copper-mines. In Egypt, Hathor was not only worshipped as a universal and principal Egyptian deity who held the key of life and death, and who granted the “fertility” of mines as well, but also as mother of the king, similar to Astarte in Phoenicia. As the Cypriote goddess in her principal urban or a palace sanctuary must also have been a protectress of the dynasty proper, her depiction in the form of Hathor, the protective goddess of the Egyptian pharaohs, was a very appropriate one.⁴⁷ Thus, such comparatively rare monumental Hathor-capitals could have well been dedications by members of the royal families, if not by the kings themselves.

All different types of Near Eastern and Egyptianising goddess-representations in Cyprus were introduced by the Phoenicians. However, they were soon generally accepted and adopted by a broader Cypriote population, including the kings, who all would have regarded those types as an appropriate representation for the various different aspects of their universal, but, until then, iconographically rather elusive Great Goddess.

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46. For similar considerations see Sørensen 1993: 88.

47. Such a function is also underlined by the royal dedications e.g., to Aphrodite Kypria on the acropolis sanctuary in Amathous where Hathor-capitals were found (see above). For references on the dynastic and royal aspects and meanings of Hathor in Egypt, as well as her significance for the mines cf. Daumas 1977 (see above).

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Reproducing a Foreign Dress. A Short Evaluation of the Archaic Cypro-Egyptian Kilt

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Abstract

In the sanctuaries of 6th century Cyprus, a limited group of votive figures carry Egyptian-style dress, head gear, jewellery, and ornaments. This collection of limestone and bronze votaries is merely one category of several, within the island's material, which testify to Egyptian(-izing) preferences. The relation to similar material from the sanctuaries on the Phoenician coast remains to be established. In an area fraught with difficulties, the following is proposed as one of several possible methods of analysis: through detailed comparison with the original Egyptian dress, the Cypriote transformations witnessed in, particularly, the male kilt are identified and better understood. Once recognised, these particular deviations can be used as tools not only in the internal analysis of the group, but also in an external comparison with related material found outside of the island. In the first case, changes taking place in the renderings of certain dress details help establish relationships between individual figures within the Cypro-Egyptian tradition. Secondly, the characteristic—and erroneous—renderings of the figures' dress can be likened to "fingerprints", possible to match against related material found at Phoenician sanctuary sites. The broad aim is, of course, to gain further knowledge regarding from where the Egyptianizing influence reached Cyprus, by which ways, and why it was taken up in the local 6th century workshops at such a scale.

In the Iron Age Levant, in general, and in the art production of the Phoenician cities in particular, a strong Egyptianizing tendency can be seen. It is mainly the elaborate New Kingdom iconography that has been borrowed. In three dimensions, it is specifically the male royal accoutrements of this period which have served as inspiration. The Egyptian royal crowns are depicted, alongside the elaborate floral collar in vogue during that particular period. The emphasis, however, is on the royal New Kingdom kilt (Fig. 1). The Egyptianizing kilt can mainly be found on Phoenician male votive figures made out of stone,¹ but also in ivory renderings, in both two and three dimensions.² Egyptian influence, and/or the refer-

1. For Egyptianizing stone votive sculpture found in Phoenician sanctuaries, see, *i.a.*, Dunand 1944–1948: Pls. XVI: 6–9 and XVII: 10–11; Dunand and Saliby 1985: Pls. XLIV and XLVI; Stucky 1993: Taf. 6: 13 and 7: 15–16; and Doumet Serhal et al. 1998: 65–67, #24–26.
2. Ivory plaques of Phoenician manufacture, once nailed to beds, chairs and the like, have been well published and analysed. Among the Phoenician ivory material found at Nimrud were further a certain amount of statuettes in the round. See, for example, Mallowan 1966: 480; Herrmann 1986: Pls. 338–339: 1292 and Pl. 340: 1293.

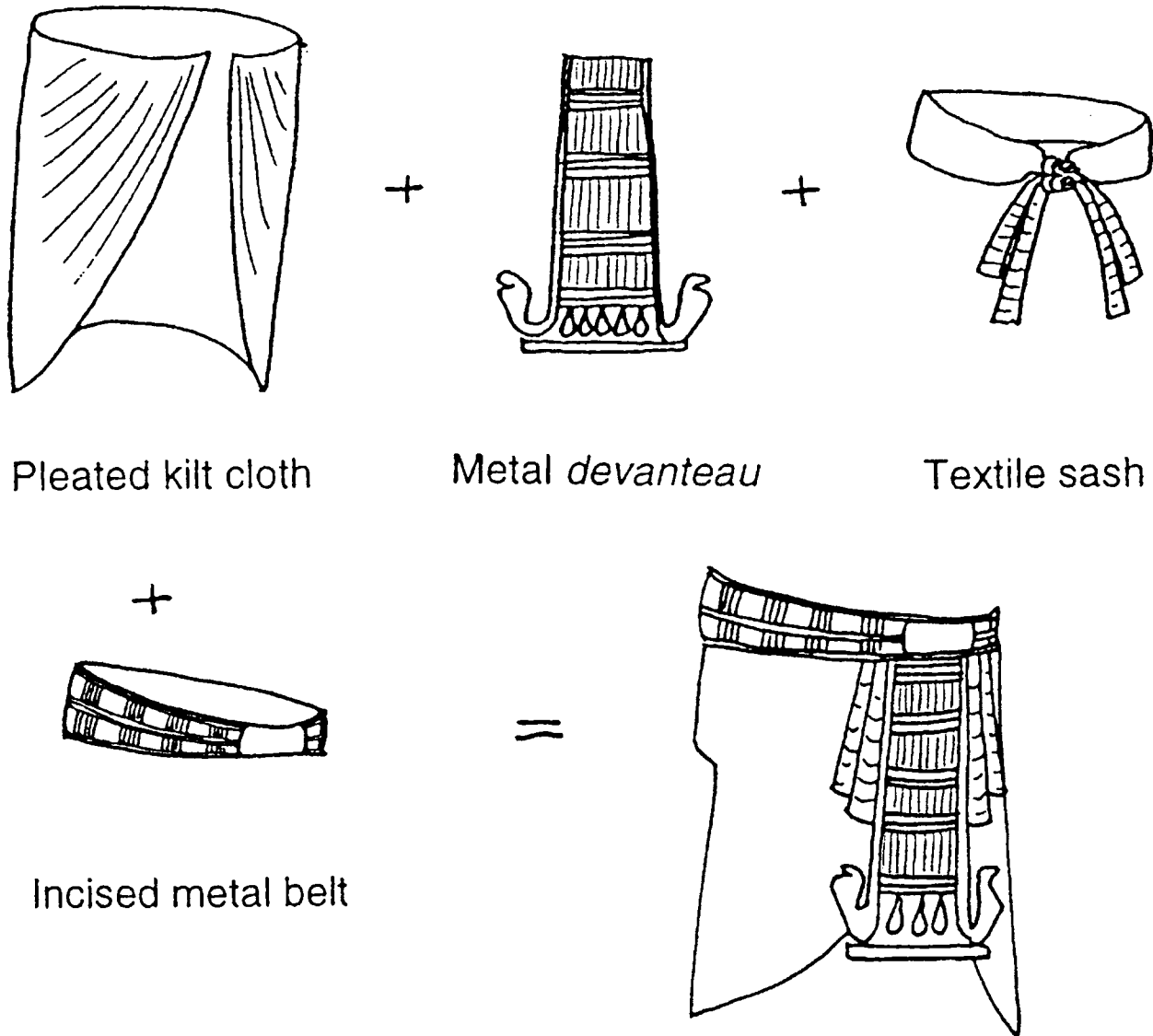


FIGURE 1. The royal Egyptian New Kingdom kilt with *devanteau*.

ence for an Egyptianizing iconography, are further witnessed within religious architecture,³ jewellery,⁴ and metal work, and is not least apparent in the evidence we have regarding rituals surrounding the death of the Sidonian kings.⁵ This fact, alongside the materials used—ivory, precious metals, and, no doubt, precious woods—testify to what level of society was involved or acted as patrons.⁶ Usage of the term “Egyptianizing” proves adequate when we see

3. Wagner 1980: 107–111.

4. See Marshall 1911: No. 1555, for a Phoenician “Horus collar”, where the falcon heads are turned the wrong way, facing each other.

5. King Tabnit, as well as his son Eshmunazar II (late 6th to early 5th centuries B.C.), chose to be buried in re-used Egyptian anthropoid sarcophagi. The Phoenician inscriptions added to the coffins speak of no Egyptian gods, however, but only of Astarte and Eshmun. See, for the inscriptions, Elayi 1989: 37–40; further, Buhl 1983: 199–200; and Jidejian 1971: Nos. 86–87, for the mummified head of king Tabnit.

6. As do the techniques being used; see Herrmann 1986: Pl. 418 (*cloisonné* technique), and Pl. 419 (gold overlay).

that direct Egyptian imports are few, and that the material culture carrying an Egyptian imprint is instead indigenous,⁷ with artefacts seemingly being made locally in Phoenician workshops by Phoenician artisans.⁸ P. Wagner has pointed out that the Egyptianizing features in Phoenician material culture reached a zenith during the Persian period, a time when both Egypt and Phoenicia were under Achaemenid rule.⁹

Indeed, the related material culture of Cyprus displays the same particularly strong Egyptianizing tendency, with a similar emphasis on the (late) 6th century B.C. Albeit no religious monumental architecture has been found on the island which can be tied to Egyptian models,¹⁰ there is an abundance in limestone and metal artefacts expressing a similar taste for things Egyptianizing. An obvious material category in this respect is the limited but iconographically homogenous group of male votive sculpture—not seldom rendered in life-size—which carries Egyptian(-izing) dress, jewellery, and head-gear, outfits which are adorned by decorative motifs chosen from Egyptian iconography (Fig. 2).¹¹ Just like in the Phoenician case, there seems to be no direct Egyptian technical know-how behind the manufacture of these cultic figures, but they are produced in the soft Cypriote limestone by, seemingly, local craftsmen.¹²

It is highly interesting to hypothesize on the reason or the societal background for this Cypro-Phoenician Egyptianizing tendency. There are several inherent difficulties, however, when we ask whether there was a religious consciousness behind the Egyptianizing form so apparent in Cypro-Phoenician material culture.¹³ If we wish to approach the tendency—or indeed the mechanisms behind it—we need to narrow our frames of investigation. We believe that what is called for here are detailed analyses of limited groups of material. Only after carrying out such basic work can we attempt to approach the religious, political or other structures underlying these expressions in art. The outcome may not be wide-reaching

7. See the thought-provoking article by C. Lilyquist on Egyptian vs. “Egyptianizing” in the Late Bronze Age, Lilyquist 1998.

8. It has repeatedly been shown, that several artefacts reveal a lack of understanding for the Egyptian religious context from which the included features were borrowed. See, for example, Leclant 1991: 17, who states that no heart scarabs, so crucial within Egyptian burial religion, have ever been found in Phoenician contexts. Moorey 1994: 36, fig. 35 (see text accompanying the illustration) presents an ivory plaque, one of many examples where Egyptian hieroglyphs and cartouches have been used in an erroneous way.

9. Wagner 1980: 177.

10. The façades of the “royal tombs” at Tamassos, however, feature reliefs which are clearly adhering to an Egyptian(-izing) sphere. Further, limestone lions and sphinxes guard the graves of upper class people, if not kings. More than a century earlier, the so-called royal tombs at Salamis are indeed spectacular evidence of a strong tie between the Phoenician mainland and the Cypriote east coast during the 8th–7th centuries B.C.

11. These figures are carried out in the local limestone. Bronze statuettes with similar outfits do occur.

12. The back-pillar support is characteristic of virtually all Egyptian sculpture depicting standing figures. There are occasional statues with a back-pillar support found in Phoenicia, while in the Egyptianizing Cypriote material, this feature is altogether lacking.

13. See I. Winter’s 1990 review article of G. Markoe’s book on Cypro-Phoenician metal bowls, Winter 1990: 240. On religious content following borrowed form, see the cautious suggestions as to possible, wide-spread knowledge of Egyptian magical, protective symbols (amulets) proposed by Leclant 1991: 17, regarding the Phoenician sphere, and by De Salvia 1993: 66–67, for Archaic Greece—where Cypriote women are thought of as conveying the meaning of *Aegyptiaca* to Greek women, thus passing on an Egyptian popular religion based on household magic protecting, mainly, women and children.



FIGURE 2. Limestone statuette found at Tamassos, Cyprus. (The Royal Ontario Museum, Toronto, Inv. 958.61.242. H. 24.5 cm). Courtesy of the Royal Ontario Museum, Toronto, Canada.

conclusions, but at least a better understanding of the internal relationship between related objects. Maybe one can even approach the important question, through what actual material(s) this rich and detailed iconography was perpetuated and spread from workshop to workshop.

At the end of an article presenting an important material of Phoenician stone statuettes, A. Nunn approaches some of the larger, structural questions.¹⁴ The nine Egyptianizing statuettes presented by Nunn, all found together in the Phoenician Eshmun sanctuary at Bostan esh-Sheik outside Sidon, are made of limestone but covered with green varnish. The craftsman/-men who made the statuettes not only sought to reproduce the male Egyptian dress—and the back-pillar support so characteristic of Egyptian sculpture—but further covered them with green varnish to make them look as if they were manufactured in faïence.¹⁵ Nunn identifies six of the statuettes as divine representations,¹⁶ the remaining three as royal. She places them chronologically between 650 and 550 B.C.¹⁷ In the concluding page, she elaborates on the reason for the manufacture of this unique group of figures,¹⁸ and sees the dedication of Egyptianizing votive sculpture in general at the Sidonian Eshmun sanctuary as a manifestation being made by the local king as well as a group of people belonging to the upper strata of society. The suggestion is that a link between people-king-god is established and reinforced by the dedication of similar royal-divine figurines. Apart from Nunn's interesting suggestion, it is notable in itself that this group of material directs our attention towards faïence figurines or indeed amulets, when trying to establish a picture of the sources of inspiration for Phoenician and Cypriote stone artists creating objects adhering to an Egyptianizing style.

In this short paper, I shall take the opportunity to present a detailed albeit very limited analysis of one part of the Egyptianizing Cypro-Phoenician material. I am focusing here on the before-mentioned group of male Cypriote votive sculpture clad in Egyptian(-izing) dress, and a key feature of their outfit will be dealt with; the elaborately decorated kilt. Such an analysis could then easily be widened to regard the other characteristics of the figures, their decorated collars, their head-gear, alongside the rich repertoire of decorative motifs which embellish them.¹⁹ When this has been done, further steps can be taken, relating the results

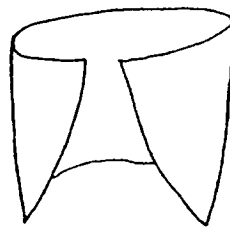
14. Nunn 1996. Thanks are due to Dirk Wicke who presented me with this article in the after-maths of the conference.

15. Macridy-Bey, the excavator, mentions how one statuette—obviously not kept together with the rest of the group in the Archaeological Museum of Istanbul, and therefore not studied by Nunn—carries hieroglyphic signs on the back (back-pillar?) Macridy 1902: 509. Obvious parallels come from the material of faïence amulets/statuettes found at Kition, see V. Karageorghis n.d., *Excavations at Kition, vol. VI. The Phoenician and later levels*.

16. The Egyptian gods Thot, Nefertem, Bes, and Khonsu are identified, based on very fragmentary evidence. In no case is the identification put beyond doubt, not least because all nine statuettes are acephalous. Nunn herself states on p. 257 that Phoenician craftsmen never studied or copied Egyptian objects in detail. It can be argued, that this very fact renders an identification based on Egyptian criteria dubious; can we be sure that a Phoenician kilt-clad statuette with a baboon (?) at its feet was meant to represent Thot only because this animal was the attribute of this particular god in Egypt? Then we must postulate—and bring into discussion—the fact that religious meaning really did follow with a borrowed form.

17. Nunn 1996: 258.

18. The obvious will to echo faïence, although working in stone; the close stylistic ties of stone figures to certain faïence amulets; the monkeys (baboons?) and lions (sphinxes?) placed at the feet of all figures with the lowermost part of the body preserved—all these are unique features for this small group of votive figures.



Plain kilt cloth

+



Textile (linen) apron

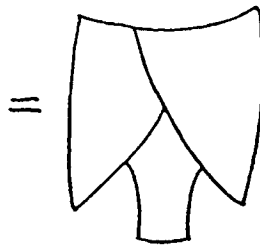
FIGURE 3. (right) The plain, royal Egyptian *shenti* kilt.

FIGURE 4. (far right) Steatite statuette of Pharaoh Amenhotep III, from Karnak. Traces of applied blue-green glaze remain. (The Egyptian Museum, Cairo, Inv. 11515. H. 25 cm) ©Courtesy of the Supreme Council of Antiquities, Cairo. Photo: Niklas Gustafson.



to artefacts from outside the island, mainly to material found on the Phoenician mainland,²⁰ but also to the Egyptian objects which were being echoed indirectly. The analysis presented here should be viewed as a glimpse of a working method, of the detailed and basic kind mentioned above. Before going into detailed analysis, however, a few things have to be said about the Cypriote figures, as well as on Egyptian royal kilts.

The Cypriote Egyptianizing figures—a brief presentation

Witnessed in limestone and bronze, but never in terracotta,²¹ the Cypriote Egyptianizing figures come in all sizes, from the miniature to the colossal.²² They stand bare-footed

19. Such an analysis is attempted in my forthcoming dissertation, *Egyptianizing Sculpture from Cyprus—a Testimony of Cross-Cultural Contacts in the Archaic Age*.

20. K. Lembke of the DAI in Damascus is currently working on the rich votive material from the temple or Ma'abed at Amrit, Syria, in cooperation with geologist C. Xenophontos. It will be highly interesting to relate the Cypriote Egyptianizing figures to the Egyptianizing material found at this important sanctuary site.

21. The lower part of a colossal terracotta figure found at Tamassos indeed has two worm-like cobras hanging down along the central part of its "kilt". See Karageorghis 1993: Pl. XIX: 5, cat.no. 72.

22. A statuette from Amathus, depicted in Karageorghis, Mertens et al. 2000: 114, no. 179, was originally between 15–20 cm in height. A torso from Golgoi, on the other hand, kept today in the Ringling Museum of Art in Sarasota (Inv. SN 28.1923), belonged to a figure of over 250 cm in height. See Cesnola 1885: Pl. XXII: 50.

with the left leg advanced,²³ and have their arms hanging along the sides of the body, alternatively one arm bent with the clenched fist resting on the chest. The group of figures can basically be defined by their wearing of the Egyptian kilt, a garment which comes in different versions from the plain to the elaborately decorated. The upper part of the figures' bodies are often covered by a tight-fitting, short-sleeved tunic, over which is occasionally placed the broad and beautifully decorated Egyptian collar, or *ousekh*. It can be noted, that the decoration of the Cypro-Egyptian collars clearly harks back to the elaborate New Kingdom floral type. In its Cypriote form, it displays the characteristic olive leaves and blue lotus petals, alongside mandrake or persea fruits, all in a highly standardized form.²⁴ Apart from the pleated wig and the plain head-cloth or kerchief, the Cypriote figures are carrying a squat version of the Egyptian double crown on their heads. Occasional examples of helmets and rosette diadems occur crowning these kilt-wearing figures.²⁵ Despite their foreign outfit, the Cypriote Egyptianizing figures remain distinctly Cypriote in material, style, and modes of technical execution. They display several traits which tie them closely to the remaining corpus of limestone votive sculpture from the island, a fact clearly testifying to their manufacture within indigenous workshops.

The basic feature relating these figures to each other remains the plain or decorated kilt, and it is on this garment that we shall focus in the remaining section of this paper.

The Egyptian kilts

To be able to evaluate the Cypriote kilt, we first have to get to know the Egyptian kilt proper. Generally speaking, there are two kinds of Egyptian kilts. First, the so-called *shenti*, introduced during the Old Kingdom—a plain or pleated kilt cloth wrapped around the hips, overlapping the upper part of an apron with concave sides (Fig. 3). Secondly, the New Kingdom pleated kilt with a frontally hanging *devanteau*, a device which in most cases was provided with laterally hanging cobras, or *uraei* (Figs. 1 and 4). A fundamental difference between the apron belonging to the *shenti*, and the *devanteau* hanging in front of a kilt, was that of material; while the apron was an integrated part of the *shenti* kilt and thus made of cloth—mostly linen—the *devanteau* was a bead-or metal device suspended from a metal belt by means of tiny hooks.²⁶ This material difference is worth keeping in mind when studying the Cypro-Egyptian material.

The original Egyptian *shenti*, although highly prestigious, was quite a simple type of kilt, while the New Kingdom kilt with *devanteau* was subjected to the general elaboration of dress taking place during that period of time, with various complementary devices added to it. The most frequent addition were the beautiful textile sashes which were tied around the waist of the kilt-bearer, and whose ends were depicted in a—soon enough—standardized manner, hanging down on each side of the *devanteau*.

23. One single Cypriote figure, a bronze statuette from Idalion, has the right leg advanced, instead. Reyes 1994: Pl. 11: c (the British Museum, Inv. 1872.8–16.96).

24. No less than ten out of the seventeen elaborately decorated Cypriote collars have this distinct set of decoration in their registers. See Faegersten n.d..

25. See Karageorghis, Mertens et al. 2000: 113 (no. 177) and, for a figure in the *Antikensammlung*, Staatliche Museen zu Berlin: Sk 7873, Inv. TC 6682.3; Brönnner 1990: 39–42 (no. 26).

26. Vogelsang-Eastwood 1993: 32; Carter 1927: 134–135, Pl. LXXXIII: B; Vogelsang-Eastwood 1999: 99, fig. 6: 6.

Judging from Egyptian representations, the *shenti* kilt was originally a royal privilege, but already during the Middle Kingdom it had spread to other—albeit aristocratic—levels of society.²⁷ The New Kingdom kilt, on the other hand, with its decorated bead-or metal *devanteau*, frequently equipped with a pair of royal cobras or *uraei*, seems to have been restricted in use for Pharaoh himself, alongside, of course, the male gods of the Egyptian pantheon.

The Cypriote reproductions of the Egyptian kilt

Turning now to the kilts of the Cypriote figures, they display—not surprisingly—transformations or deviations in relation to the Egyptian kilt types. In a high-quality piece, found at the site of ancient Golgoi/Ayios Photios (Fig. 5), a diagonally pleated kilt cloth fully overlap the upper part of an apron with concave sides. This is the finest correspondence in the Cypriote material to an Egyptian *shenti*. However, the apron is not the plain *shenti*-apron one could await; first, it displays centrally hanging cobras, where the creatures indicate that we are dealing with an Egyptian *devanteau*, although they have abandoned their lateral positions. Secondly, the “apron” is decorated by four sash-ends, two on each side of the centrally placed snakes. As seen above, the Egyptian New Kingdom kilt has the ends of elaborate sashes coming down on each side of the *devanteau*, covering part of the kilt cloth. Here, the “sash-ends” are merely added as decoration to what we may term a hybrid form, a combined apron-*devanteau*. In this particular statue, the elements of the Egyptian kilt have been combined in a new way, creating a specific hybrid form. Interestingly, this particular arrangement is found in only one further instance in the island’s material, in a fragmentary colossal figure found at the very same site, Golgoi.²⁸

A majority of the Cypro-Egyptian figures wear a kilt dress which more closely echoes the New Kingdom kilt with *devanteau*.²⁹ A second life-size figure excavated at Golgoi has a broad belt holding up a plain kilt cloth. In front of the kilt hangs a rectangular device with rows of bead-like, standing rectangles, its lateral borders made out by thin, hanging cobras (Fig. 6). The lower edge of this Cypriote *devanteau* is cut off straight just underneath the cobras. On each side of the *devanteau* hang four plain sash-ends. If we choose to go into details, we may note that the general Egyptian *devanteau* known to us from depictions and archaeological contexts is trapezoid, its lower end being the broader. What is more conspicuous; on each side of the lateral cobras of the figure in question there are ridges, confusing the impression that the slender bodies of the cobras are the true outer limits of a metal device. Instead, if we are to judge by the lowermost part of the *devanteau*, the cobras are adorning a broad apron. There is clearly a lack of correspondence between the upper and the lower part of the kilt of this votive.³⁰

27. Vandier 1958: 108 and 249.

28. Cesnola 1885: Pl. XXII: 50. The John and Mable Ringling Museum, Sarasota (Inv. SN 28.1923). See above, note 22.

29. In fact, all Cypriote examples of kilts, without exception, carry at least one of the elements which are characteristic of the elaborate New Kingdom dress.

30. Much related is another life-size figure found west of Salamis. In this case, the confusing ridges on each side of the cobras are not present, but the “*devanteau*” is indeed depicted as a separate device hanging in front of the kilt. Accordingly, the Salamis figure makes out our closest Cypriote parallel for the Egyptian New Kingdom kilt with *devanteau*. It is today in the Famagusta Museum—it follows that I have not had the possibility to study the piece myself. See Karageorghis 1961: 286, fig. 40.

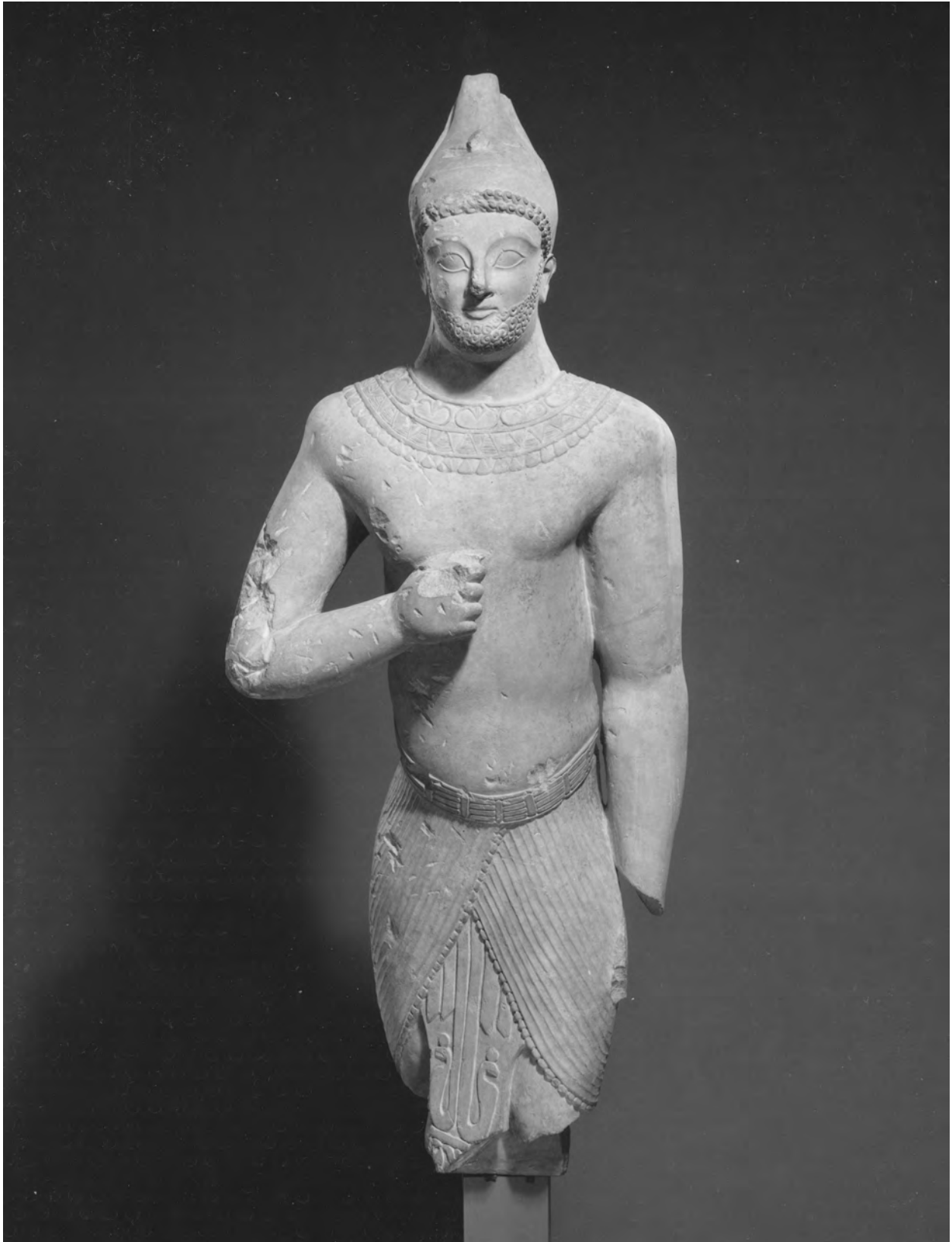


FIGURE 5. Sculpture found at Golgoi, Cyprus, wearing Egyptianizing dress. (The Metropolitan Museum, New York, Inv. 74.51.2472. H. 130 cm). The Cesnola collection, Purchased by subscription, 1874–76.

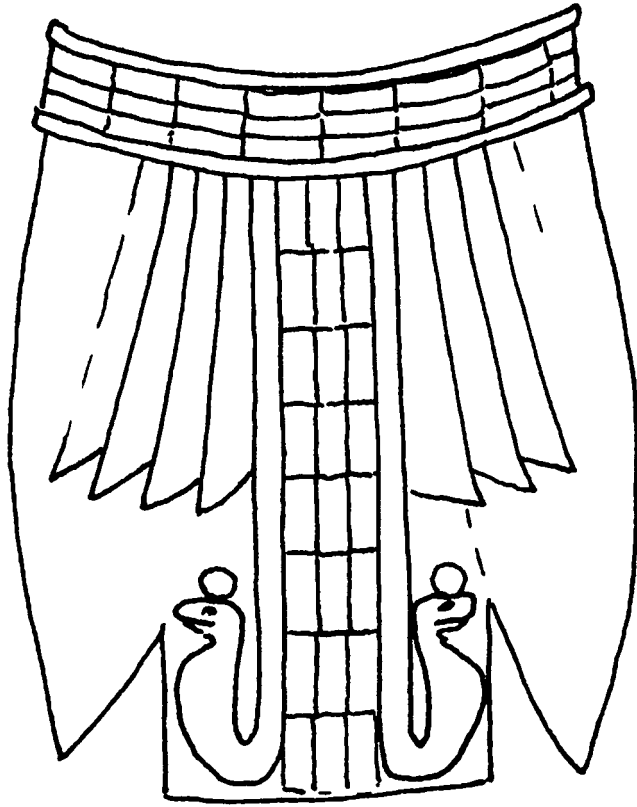


FIGURE 6. Drawing of the kilt of a sculpture found at Golgoi, Cyprus, wearing Egyptianizing dress. (The Metropolitan Museum, New York, Inv. 74.51.2471. H. 105 cm)



FIGURE 7. Fragmentary Egyptianizing statuette, found at Idalion, Cyprus. (The British Museum, London, Inv. 1917.7-1.149 (1873.3-20.48). H. 30.5 cm). ©Copyright The British Museum. Photo: Philip Nicholls.

The kilt of this last figure echoes the Egyptian *devanteau* which consisted of either rows of thin vertical beads, kept in place by thin, horizontal space bars, or the inlaid metal version thereof (Fig. 1). Such a metal *devanteau*, made of gold and inlaid with lapis lazuli, was indeed found in the grave of young Pharaoh Tutankhamun.³¹ In the Cypriote figure, the sculptor emphasized the rows of vertical beads. Let us have a look at two further figures where the horizontal space bars of the *devanteau* have been accentuated, instead. One of the fragmentary limestone statuettes found at the sanctuary at Idalion (Fig. 7) has clear-cut details of dress. Sturdy cobras hang down from the belt at a certain distance from each other, curving away from one another in the characteristic rearing position.³² Between the bodies of the cobras, connecting them at intervals, are three broad horizontal bands. Most

31. Carter 1927, Pls. XXX and LXXXIII.

32. Much remains to be said on this piece, for instance that the coiling tail of the right-hand side cobra—coming out from underneath the sash-ends—most probably constitute a misunderstanding of an Egyptian dress feature. In Egyptian representations of New Kingdom kilts with sashes, an additional sash—often much longer than the rest—can be tied into a loop just underneath the belt. Where, and in what material, did the Cypriote sculptor see this detail, in order to misinterpret it in this way? Details like this one add perspectives to our questions regarding the ways and materials through which the transmission of motifs between art centres took place. See Faegersten n.d.

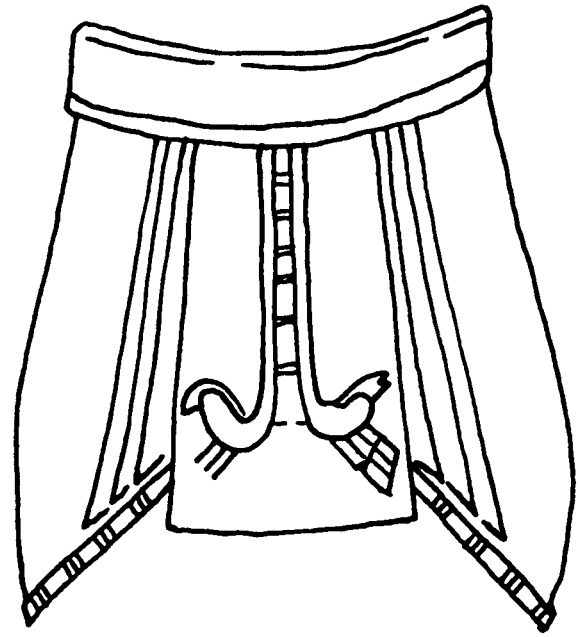


FIGURE 8. (left) Limestone statuette from Cyprus, exact provenance unknown. (The Louvre Museum, Inv. MNB 408. H. 30 cm). ©Département des Antiquités orientales/ Musée du Louvre.

FIGURE 9. (above) Drawing of the kilt of the Louvre statuette of fig. 8.

probably, the bands echo the horizontal space bars found on Egyptian *devanteaux*; here, as well, rectangular areas are created between these horizontal bars.

A similar rendering can be found in a statuette of unknown provenance, today in the Louvre Museum (Figs. 8–9).³³ In this figure, we find a kilt cloth bordered by a typical Egyptian pattern, in front of which hangs a slightly trapezoid *devanteau*. The lower end of the device is the broader, in this coming quite close to the Egyptian model. On both sides of the *devanteau* are three standardized sash-ends, and two winged cobras hang down centrally along the device. Were it not for the central placing of the cobras, the figure's kilt would make out quite a well-understood replica of the Egyptian dress. Between the bodies of the snakes, however, we find six thin horizontal bands, beneath which there is a final plain, incised line between the hoods of the cobras. This clearly indicates to us that the sculptor had the Egyptian *devanteau* in mind. Here, too, the parallel horizontal bands most probably reflect the space bars of the Egyptian device. In this case, we end up with a *devanteau*—the cobras and the horizontal bands between them—placed on a *devanteau*, the trapezoid device hanging in front of the plain kilt cloth.

The two last statuettes presented here, in general, and the appearance of the kilt of this last figure in particular, make it possible to propose the following, regarding the placing of the cobras on the Cypro-Egyptian kilts. We know by now that on Egyptian *devanteaux*, the

33. Musée du Louvre, Inv. MNB 408.



FIGURE 10. (above) Fragmentary Egyptianizing statuette, found at Idalion, Cyprus. (The British Museum, London, Inv. 1917.7-1.67 (1873.3-20.17). H. 25 cm). ©Copyright The British Museum. Photo: Philip Nicholls.

FIGURE 11. (above right) Fragmentary life size figure, found at Idalion, Cyprus. (Staatliche Museen zu Berlin, Preußischer Kulturbesitz, Antikensammlung, Inv. Sk 508. H. 71 cm). Antikensammlung, Staatliche Museen zu Berlin-Preussischer Kulturbesitz. Photo: Johannes Laurentius.

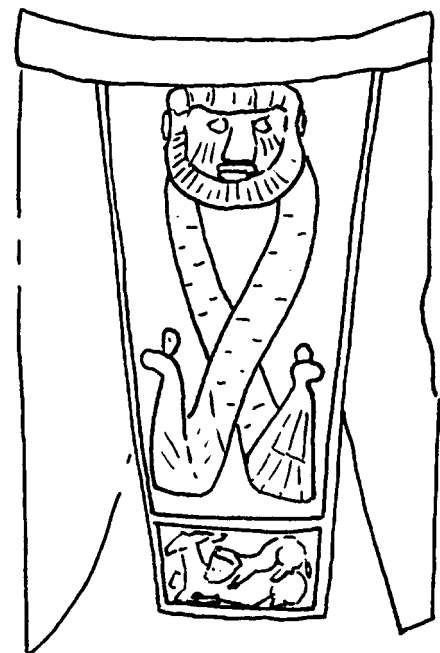


FIGURE 12. (right) Drawing of the kilt of a sculpture found at Amathus, Cyprus, wearing Egyptianizing dress. (The Metropolitan Museum, New York, Inv. 74.51.2605. H. 37 cm)

cobras made out the lateral borders of the device. In the Cypriote figures, this placing is very rarely repeated. The cobras are rather found placed centrally on the “*devanteaux*”, not infrequently hanging down body to body (Fig. 10). The cobras of the Louvre figure are connected by horizontal bands, just like in the normal *devanteau*, but the creatures are treated not as the outer parts of a dress component, but rather as ornaments decorating the “*devanteau*” of the figure. It may be, that this is a key to understanding why a majority of the Cypriote sculptors depicted the cobras close together; in these figures, the memory of the original horizontal space bars was gone for good, and what remained were cobras which belonged together, and therefore were placed centrally—often body to body—on the kilt.

It further seems, that once the Cypriote cobras have reached this central position, they can come to life, even interact. In a fragmentary life-size figure, found at Idalion, the cobras are vividly rendered with wide-open mouths and protruding tongues (Fig. 11). The same goes for the winged creatures on another kilt originally from Golgoi, today found in the Cesnola collection of the Metropolitan Museum of Art.³⁴ In the elements decorating the kilt of this figure, however, the cobras’ elongated bodies have been left out of the composition. In certain figures, the freedom of the cobras is further highlighted by their interplay, their two bodies overlapping (Fig. 12).³⁵ This is indeed far from the metal counterparts placed as vertical decoration on Egyptian *devanteaux*.

Summary

In this short paper the focus has been on the male Cypriote Egyptianizing kilt. As was said above, all Cypriote kilts display one or more features which reveal that they were influenced by the elaborate New Kingdom type of kilt, with *devanteau*, sash-ends, and laterally hanging cobras. A handful of local Cypriote deviations from this Egyptian original dress have been presented and it is suggested, that the nature of these deviations or hybrid forms can be of help in the evaluation of the Cypriote group of Egyptianizing votive sculpture as a whole.

Despite the very restricted range of this paper, certain arguments can be made. It seems evident, from the variations encountered among the Cypriote hybrid kilt forms, that the local sculptors did not have actual textile objects at hand to imitate, but rather depictions in art of the male Egyptianizing dress. Further, in terms of the rendering of the individual dress features, the Cypriote Egyptianizing kilts deviate strongly from the Egyptian original ones. This fact, taken together with the above-mentioned lack of Egyptian technical know-how witnessed in the Cypriote figures, makes it improbable that the influences reached Cyprus by way of Egyptian workshops.

Analyses of the remaining elaborate outfit of the Egyptianizing figures from Cyprus—of their head-gears and collars, as well as of the motifs adorning them—can be added to this picture. The results will not only enable the establishment of internal relationships

34. The Metropolitan Museum, New York, Inv. 74.51.2603. See (Cesnola 1885), Pl. XLII: 279, but, for a better picture, Karageorghis et al. 2000: 112, no. 176.

35. Cesnola 1885: Pl. LIV: 347. See, further, a figure which used to be part of the Cesnola collection in New York, but which today is housed in the John and Mable Ringling Museum in Sarasota (Inv. SN 28.1917). It displays vertically hanging cobras whose bodies overlap in a similar manner. For a parallel from the Phoenician sanctuary at Amrit, see the colossal torso with demonic head and overlapping cobras reproduced in Dunand 1944–1948, Pl. XVI: 9 (the Tartus Museum, Inv. 1328).

among the Cypriote figures themselves, but further—and perhaps more importantly—can be used for comparative analyses with related material found outside of the island, most notably at Phoenician sanctuary sites. We may then approach issues like through what actual material(s) this iconography was perpetuated and spread from workshop to workshop. Indeed, identifying and comparing hybrid forms is one possible way to approach the Cypro-Phoenician Egyptianizing material culture.

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SECTION III

The Tell

The Birth of a Tell. Site Formation Processes at Tell Shiukh Fawqani (Upper Syrian Euphrates)

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Abstract

The formation processes of the earliest settlement phases (Late Uruk and EBA I) of the site of Tell Shiukh Fawqani have been investigated by means of stratigraphic excavation, geomorphologic and pedological survey, and micromorphological analysis of selected stratigraphic sequences. The basis of the mound consisted of a re-worked soil, which had been deforested and probably cultivated before the foundation of the Late Uruk settlement. The most interesting results were obtained from the analysis of different fills of a lane crossing the EBA I village and separating a series of buildings of domestic and public use. The fills of the lane were composed mainly of mud-brick fragments of different size resulting from the rain erosion of the façades of the buildings, phytoliths, ovicaprid coprolites, and ash. The rhythmic alternation of these deposits suggests that the fills of the lane accumulated principally as a consequence of the cyclic succession of wet and dry seasons over a time span of approximately seventy years.

Foreword

Tell Shiukh Fawqani is a small-sized site on the Upper Syrian Euphrates settled from the Late Uruk to the Middle Islamic period. The mound, which is located on the left Euphrates bank 8 km to the south of Carchemish within the Tishrin rescue area, was excavated from 1994 to 1998 by teams of the University of Udine and the CNRS under the joint direction of F.M. Fales and L. Bachelot.¹

The site was founded during the Late Uruk period probably as a small village which was part of an Uruk-related enclave of many “Southern” sites associated with a centre at Carchemish. Occupation continued into the EBA I, when the withdrawal of Uruk settlements and the ensuing disruption of previous inter-regional exchange networks were followed by the fragmentation and re-organisation of local power structures into new regional entities. A settlement hiatus covering the EBA II–III may have followed the end of the late fourth-early third millennium village.² Finally, the Early Bronze Age sequence is completed by the dis-

1. For the preliminary results of these campaigns, cf. Bachelot et al. 1995, 1996, 1997, Bachelot 1999, Luciani 2000, Morandi Bonacossi 2000. As from 1999 excavations have been carried on by the CNRS.
2. The presence of a real gap in the stratigraphic sequence of Tell Shiukh Fawqani corresponding to the early and mid-third millennium B.C. can not be proven with certainty, since the very strong erosion that affected the flanks of the mound might have completely removed post-EBA I deposits. However, the absolute lack of EBA II–III ceramic material on the surface of the tell and of extrusive sherds of these periods in earlier contexts seems to indicate a break in the settlement sequence of the site.

covery of badly preserved EBA IVA domestic architecture and contemporary graves, which attest the occupation of the site during the second half of the third millennium B.C.

A continuous cultural sequence spanning the period from the Late Uruk to the EBA I was excavated in Area D, on the steep western slope of the tell.³ This paper deals with this sequence and, in particular, with the birth and early stages of the mound of Tell Shiukh Fawqani, i.e., with the nature of the bedrock on which the tell was built up and the causative factors and processes that determined the formation of the archaeological stratification above it during the late fourth-early third millennia B.C.

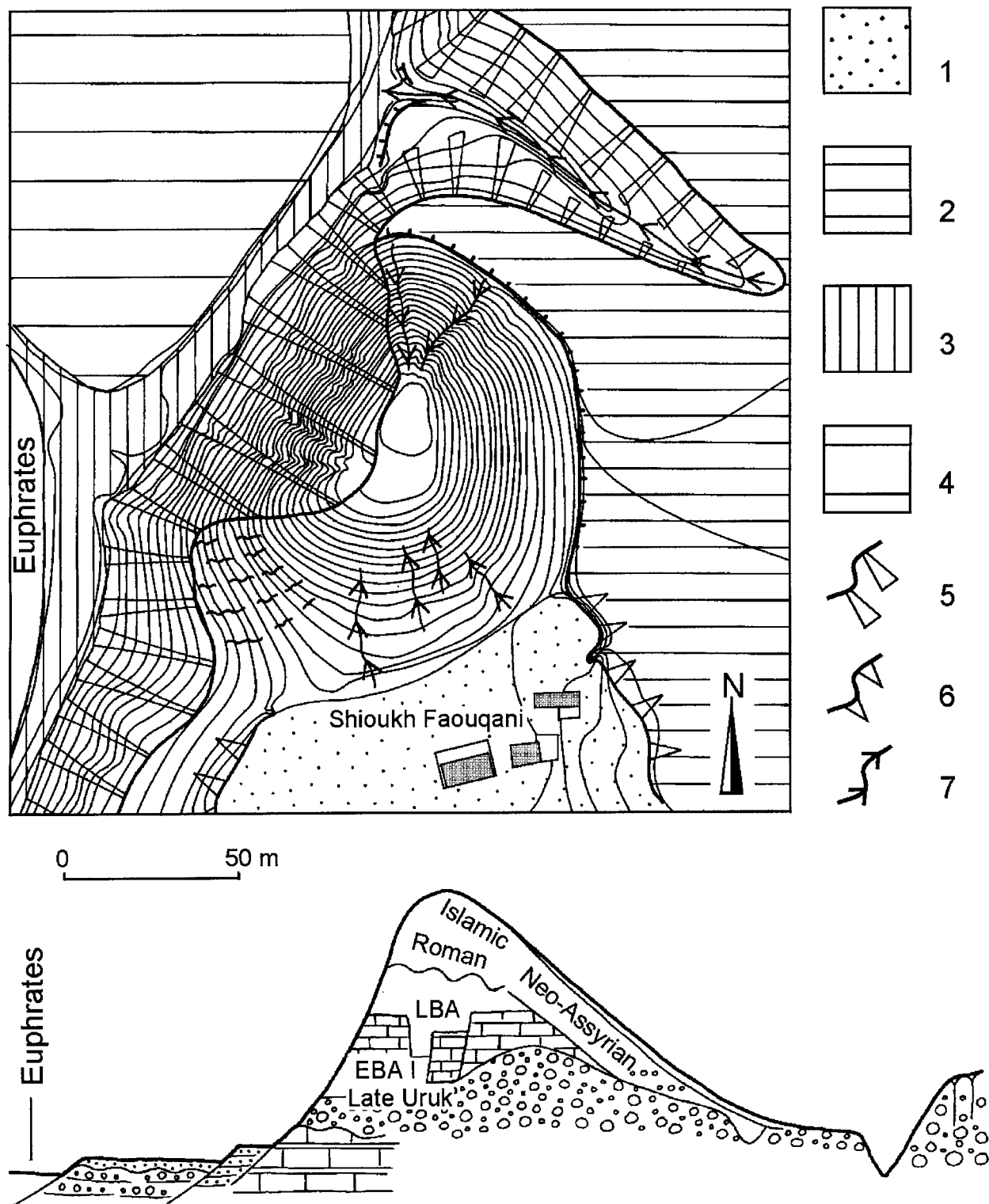
Site formation processes at Tell Shiukh Fawqani have been investigated by means of stratigraphic excavation, geomorphologic and pedological survey, and micromorphological analysis of undisturbed samples from selected stratigraphic sequences, following a rich literature on this subject which has been developing in recent years (Courty et al. 1989; Gé et al. 1993; Matthews 1995). Oriented thin sections of 10 x 7 cm were obtained, observed under polarised microscope and described following Bullock et al. 1985 and Courty et al. 1989. In this paper an empirical description of the features identified and a discussion of their genesis has been preferred to a formal micromorphological description, which will be the subject of further work (Cremaschi and Morandi Bonacossi n.d.).

The base of the tell and the Late Uruk foundation of the settlement

Archaeological excavation in Area D reached the natural soil on which the Late Uruk settlement was built. This soil consists of a thin reddish B clayey horizon lying on the unweathered gravel of the Late Pleistocene river terrace (Fig. 1). In thin section the fine fraction appears to be depleted of carbonates and mixed to a high amount of fine subdivided charcoal. The soil is not very developed in comparison with the palaeosol belonging to the same geomorphologic unit that is found in the surroundings of the tell and consists of a thick strongly clayey rubefied alfisol. The reddish B-horizon underneath the tell had therefore been eroded and re-worked before the tell formation started. The presence of copious fine subdivided charcoal flecks probably deriving from slash and burn practice may suggest deforestation and possibly cultivation of the area before the foundation of the Late Uruk settlement.

On the natural soil of the Late Pleistocene terrace in the second half of the fourth millennium a settlement was founded, which was identified at the bottom of the stratigraphic sequence of Area D in a small sounding of 2 x 1.50 m. The remains of a massive wall forming an angle and built with unworked blocks of limestone were excavated. Due to the limited extension of the sounding, the function of this feature cannot be assessed at present. An interpretation as a platform for a larger building or part of a fortification wall of the settlement seems plausible. Numerous Uruk-related pottery types and few local indigenous ceramics were associated with this wall. Although the very limited extension of the investigated surface makes any interpretation difficult and hypothetical, the excavated ceramic assemblage with its decided predominance of mineral on vegetal-tempered wares and of Mesopotamian Uruk on local types shows that we are facing an Uruk-related occupation with a largely dominant southern component. Due to its size and characteristics, this “Southern” community can be regarded as part of a wider local system of Uruk settlements controlling the segment of the Upper Euphrates valley flooded by the Birecik and Tishrin Dams and including other sites such as those recently explored at Tell el-‘Abr, Jerablus Tahtani, _adi Tepe, Kum Oca_1,

3. For the final report on the work carried out in this area, cf. Morandi Bonacossi in press.



1. Euphrates terrace with lower city. 2. Euphrates terrace. 3. Secondary river bed.
4. Abandoned meander. 5. Main scarp. 6. Secondary scarp. 7. Erosion gully.

FIGURE 1. Geomorphologic plan and schematic section of the mound of Tell Shiukh Fawqani.

Tıladir Tepe, and Yarım Höyük (Yamazaki 1999, Peltenburg 1999, Algaze et al. 1994, Rothman et al. 1998).

The EBA I villages

The EBA I stratigraphic sequence excavated in Area D consists of three main levels (C–A) corresponding to succeeding villages, which followed one another with a very decided architectural and urbanistic continuity during the late fourth–early third millennium B.C. after their abandonment, the buildings of the village of level C, which were built directly on top of the Late Uruk deposits, were levelled and used as foundations to build the structures of the following level B. The only building of level C which, due to the superimposition of the later level B architecture, was entirely excavated is Building I (Fig. 2). This rectangular construction with lime plastered inner walls, a niche in the southern wall, and a circular fireplace embedded in the floor was later covered by Building 3 of level B.⁴

The well-preserved buildings of level B belong to a village crossed by a main road. Due to the slope erosion that removed most of the later level A features, the village could be excavated on a considerable surface (230 sq. m; Fig. 3). The road, which was investigated for a length of 24 m and was flanked to the east and west by a series of buildings of domestic and public use, was intersected orthogonally by alleys dividing single buildings or blocks of buildings. In the majority of cases the excavated structures are single room buildings constructed at different times, one against the other, using the same construction techniques. All the buildings show different phases of use, i.e., a series of floors rebuilt in strict sequence. As archaeological investigation and micromorphological analysis have shown, this phenomenon was linked to the accretion of the trodden floors of the streets determined by the sedimentation of waste, mud-brick material resulting from the degradation of the façades of the buildings, and to the re-distribution by trampling of ovicaprid dung and domestic rubbish such as ash, charcoal flecks, animal bones, and sherds. The consequent progressive raising of the trodden floors of the streets determined the parallel elevation of the floors, walls and roofs of the buildings.

All the constructions of level B brought to light had a dwelling or domestic function.⁵ The only exception is Building 3, which is composed of three rooms, a small entry flanked by two larger rooms. The building displays several architectural peculiarities which clearly distinguish it from the other structures of level B: slightly different orientation, greater dimensions both in layout and wall thickness, presence of internal buttresses in the eastern wall of the main room and a small semi-circular niche placed exactly at the centre of the same wall between two buttresses.

Due to its characteristics, Building 3 (and probably also the preceding Building I of level C, cf. above) can be interpreted as a “bâtiment de prestige”, as Ö. Tunca has defined the central buildings of public use, not necessarily with an exclusively religious function as might be indicated in our case by the internal buttresses and central niche of the main room, but possibly with a multi-functional character, perhaps like the *madhafas* of today's villages of the Jezireh (Tunca 1990, Aurenche 1996). These buildings are the meeting places of the elite of the village and the reception structures where the village receives its guests. At the same time the *madhafas* are also used as mosques, i.e., as religious buildings.

4. For its possible function, cf. below.

5. For a more detailed analysis of the architecture of level B and its function, cf. Morandi Bonacossi 2000 and, especially, Morandi Bonacossi in press.

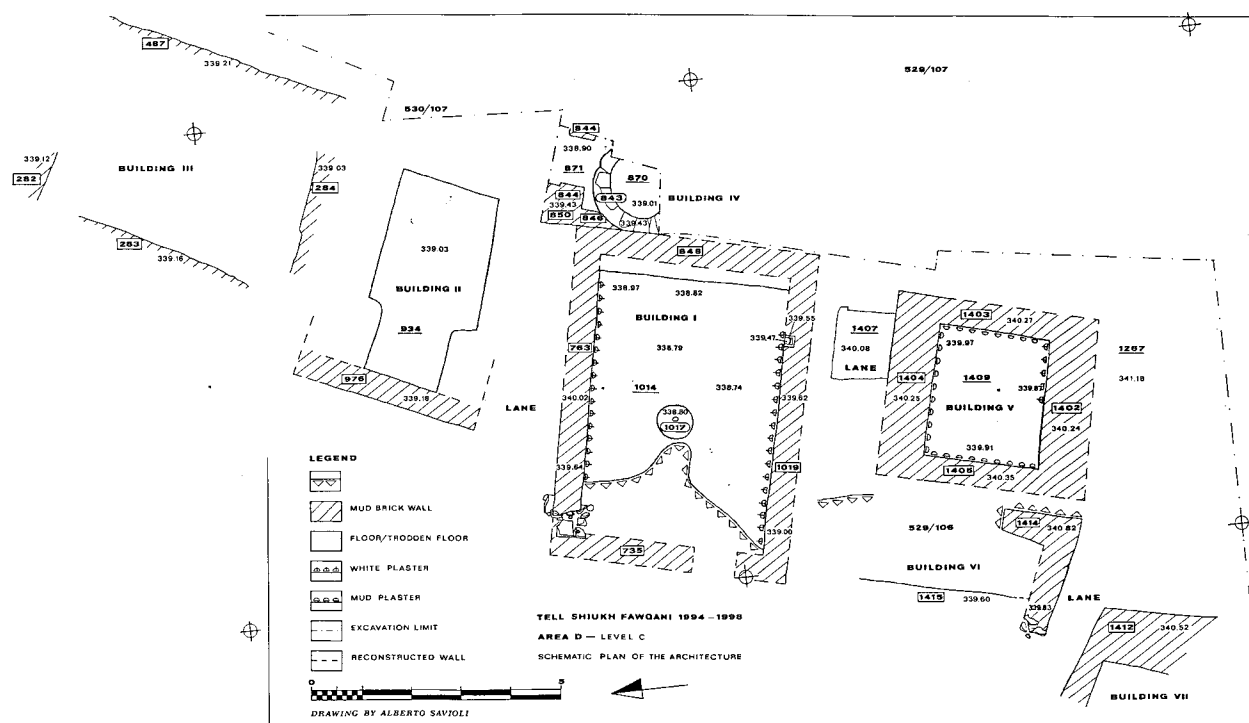


FIGURE 2. Plan of the architecture of level C.

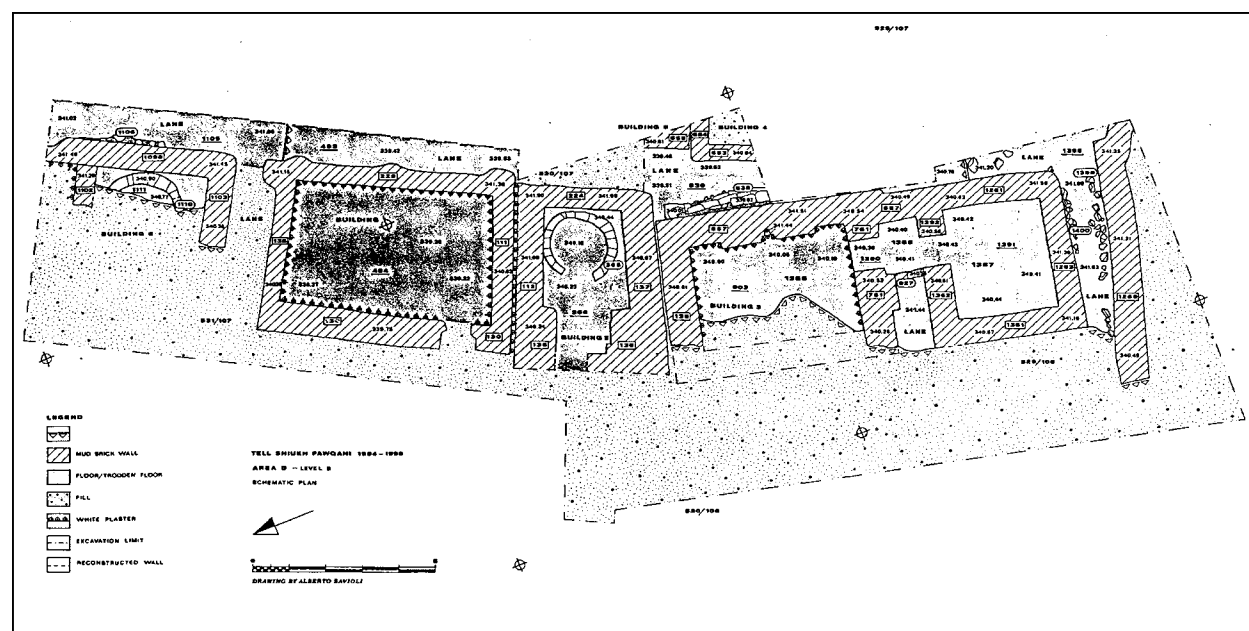


FIGURE 3. Plan of the architecture of level B.

Above the ruins of the village of level B, the buildings of level A were built. Due to its location at the surface of the mound, the architecture of level A, the most recent of the three EBA I levels, was to a large extent removed by the strong erosion of the west slope of the tell. No coherent plan of its architectonic features could be reconstructed.

The early third millennium pottery assemblage from levels C-A of Tell Shiukh Fawqani displays a distinctive homogeneity throughout the whole sequence. The pottery repertoire is

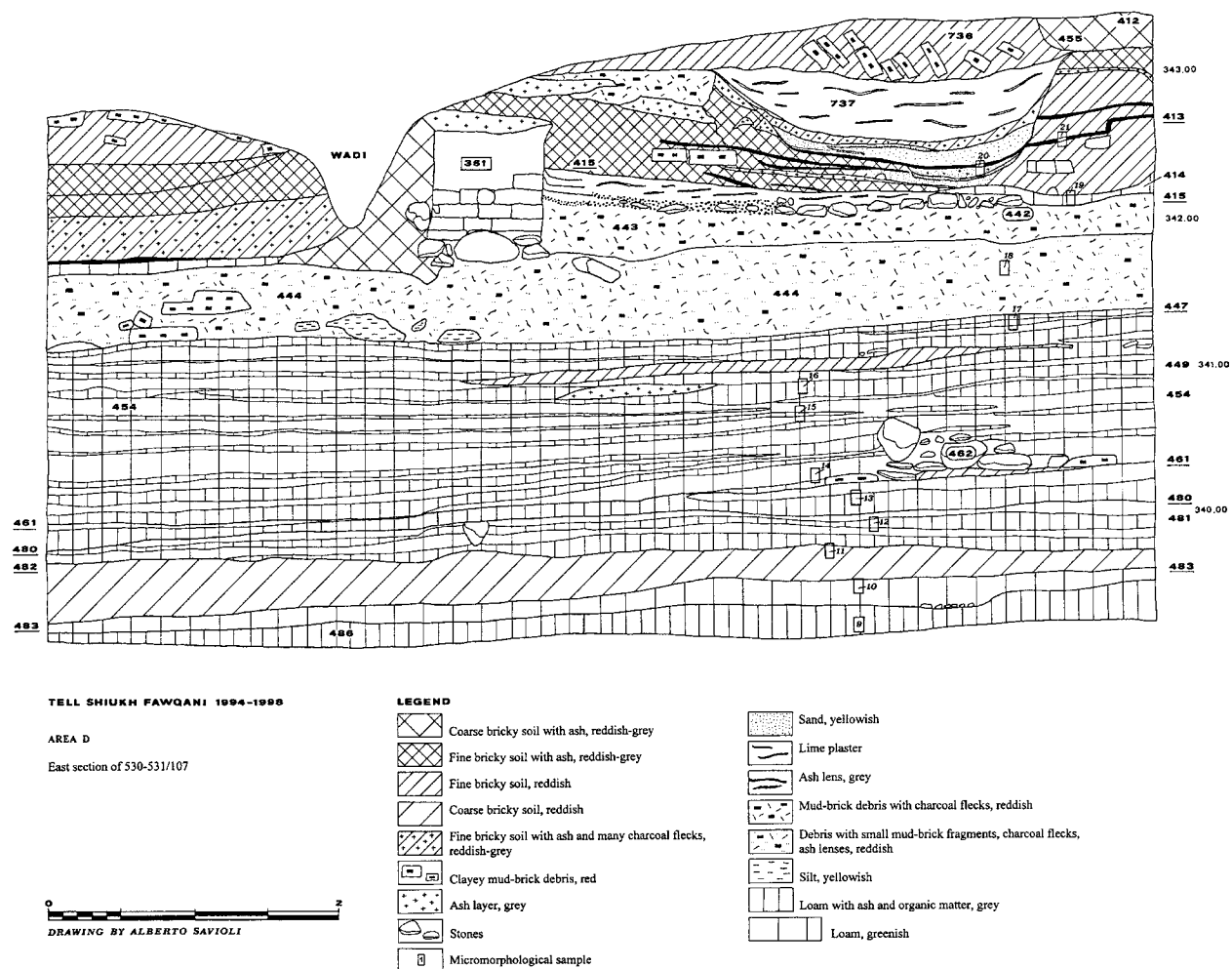


FIGURE 4. N-S section of the main lane of level B with location of the analysed micromorphological samples.

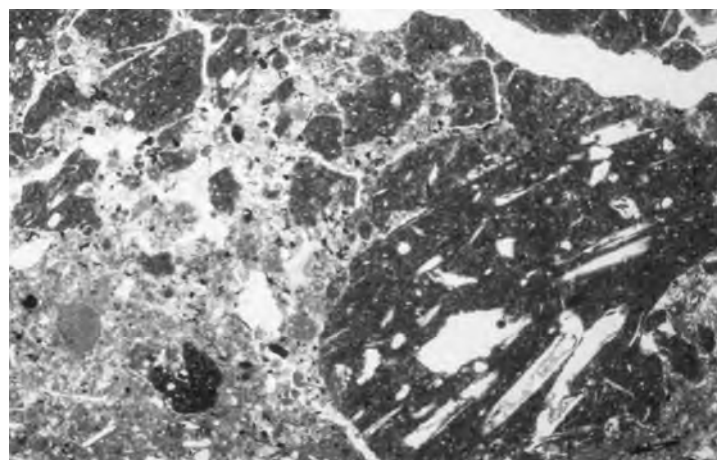
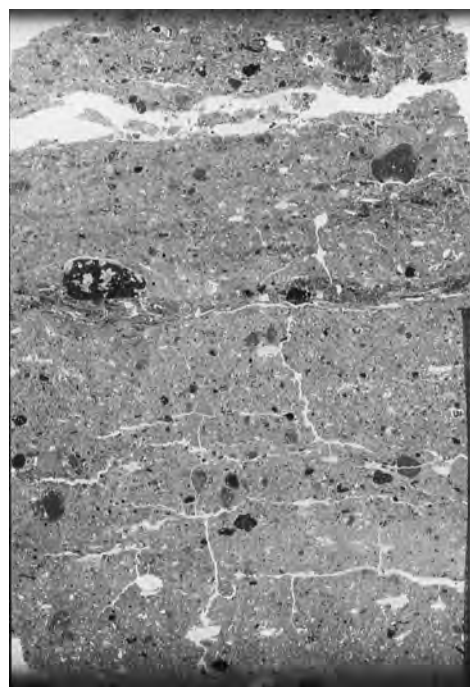


FIGURE 5. (left) Thin section of the lane of level B.

FIGURE 6. (above) Thin section of the lane, Facies A (x16), level A.

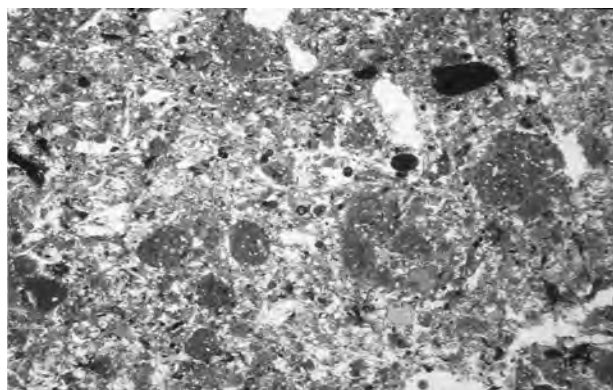


FIGURE 7. Thin section of the lane, Facies B (x16), level B.

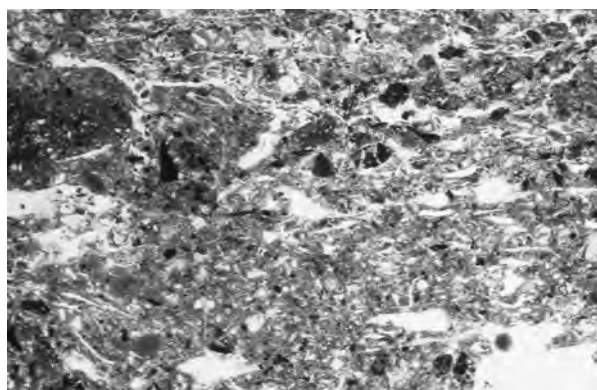


FIGURE 8. Thin section of the lane, laminae of Facies B compacted by trampling (x16), level B.

contemporary with Amuq G and can be equated with Jamieson's Horizon 1A of the Upper Euphrates region (Jamieson 1993), thus firmly placing the excavated levels C–A of Area D in the EBA I.

Two main stratigraphic sequences of the EBA I were investigated in a micromorphological perspective with the aim of comparing the fills of the main lane with the deposits that parallelly accumulated on the floors inside the buildings. Samples were taken from the lane dividing two blocks of buildings,⁶ from the floors of Building 1, a dwelling, and those of a very poorly preserved building of level A.

The fills of the lane of level B (Fig. 4) consist of planar parallel layers with a thickness of few centimetres of loamy silt and clayey silt, pink brown and reddish brown in colour (10 YR 6/4, 5/4, 7.5 YR 6/4), almost devoid of stone fragments with many mud-brick fragments alternated with ash, charcoal, and levels of vegetal fibres (Fig. 5).

From the micromorphological point of view four facies can be distinguished:

Facies A (Fig. 6) is made up by coarse fragments of mud-bricks and large charcoal flecks randomly dispersed in the fine fraction. Facies A results from the mass movement of brickly soil and occurs only at the top of the fill of the lane. Here, a 50 cm thick layer was intentionally laid before the building activity of level A started to seal the underlying soft fills of the street of the previous level B. Thus a levelling and foundation platform for the buildings of the last phase of the EBA I village was created (Fig. 4, stratigraphic unit 444). Facies A material was also used as a foundation level for a poorly preserved stone installation (Fig. 4, SU 462) built on a trodden floor of the lane.

Facies B (Fig. 7) consists of massive laminae containing mainly rounded small fragments of mud-bricks (diameter 0.5–2 mm), sometimes clast supported or dispersed in a fine matrix with finely subdivided charcoal. They can also be associated to planar laminae of coarse sand.

Facies B is one of the main components of the lane fill. The rounded mud-brick fragments were originated by processes of degradation of the façades of the buildings abutting upon the lane by a so-called rain splash process, i.e., by rain erosion, and consequent transportation of the rounded brick fragments over short distances. Furthermore, clast supported sands indicate surface washing and transportation of sediments in rainy periods. Laminae of this facies may occur in a massive state compacted by trampling, thus indicating the presence of trodden floors of the lane (Fig. 8).

6. The lane was sampled roughly every 20 cm.

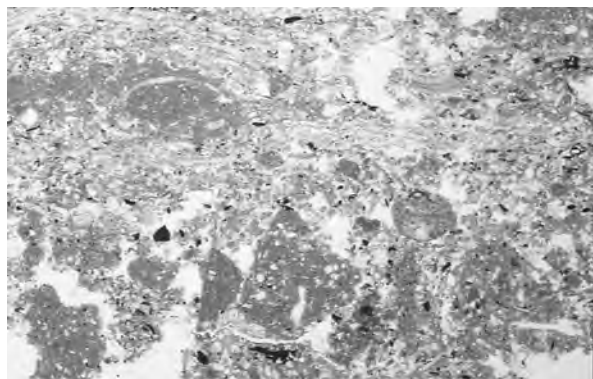


FIGURE 9. Thin section of the lane, Facies C, layers of phytoliths alternated with Facies B rounded brick fragments (x16), level B.



FIGURE 10. Thin section of the lane, Facies C, phytoliths (x16), level B.



FIGURE 11. Thin section of the lane, Facies C, magnified phytoliths (x100), level B.

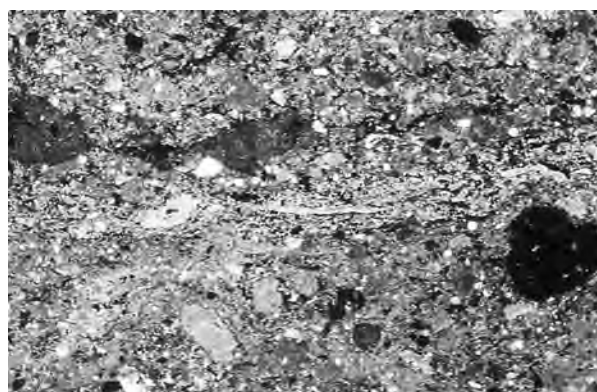


FIGURE 12. Thin section of the lane, Facies C, spherulites seen with crossed polarised light (x16), level B.

Facies C is characterised by thin layers of phytoliths alternated with *Facies B* rounded brick fragments (Fig. 9), tightly packed and with platy microstructure. Sometimes the phytoliths (Figs. 10–11) are connected to poorly preserved unburned vegetal fibres and are almost systematically associated to clusters of so-called spherulites. Recent research (Brochier 1996; Canti 1997, 1998) has demonstrated that spherulites are calcium oxalate nodules formed in the intestine of sheep and goats during digestion and are typical components of ovicaprid dung (Figs. 12–13). The ovicaprid coprolites seem therefore to be the main component of this facies. It is so far unclear if the coprolites were deposited directly on the trodden floors of the lane or supplied in form of ash. The perfect preservation of the phytoliths and the presence at the macroscopic and microscopic level of unburned plant remains make the first hypothesis more probable. Also in *facies C* lamination and fabric have been induced by trampling.

Finally, in *Facies D* small discontinuous lenses of ash consisting of druses and micritic calcite are present. This facies therefore is composed mainly of leaf and wood remains (Wattezz et al. 1990). It seems highly probable that these deposits result from the cleaning of the fireplaces of the dwellings adjoining the lane.

Summing up, the fills of the main lane of the level B village consist principally of mud-brick fragments of different size, phytoliths, coprolites, and ash. Furthermore, since the

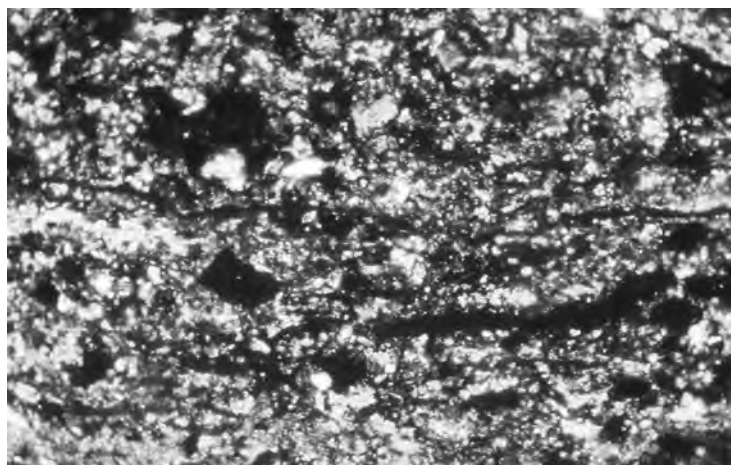


FIGURE 13. Thin section of the lane, Facies C, magnified spherulites (x100) seen with crossed polarised light, level B.

small rounded brick fragments and the fine fraction which incorporates them display a limited porosity and do not show any bioturbation and pedological features, they probably accumulated and consolidated rather quickly. But how shall we interpret this sequence from a processual and functional perspective?

On one hand we have deposits such as those of Facies A, which are made up by a brickly soil with coarse fragments of mud-bricks that represent an exception within the investigated stratigraphic sequence. Indeed, these deposits were used exclusively in selected cases with the aim of creating a solid foundation platform on the top of which buildings or installations were constructed.

On the other hand, the sequence of the lane of the EBA I village consists of three main facies (B–D), which rhythmically alternate, thus indicating a cyclic repetition of diversified processes.

The presence of the small rounded brick fragments of Facies B and their apparently high sedimentation rate are consistent with the picture of a street which was progressively filled up by material resulting from degradation processes of the mud-brick walls of the adjoining buildings caused by showers of rain. The rain split off from the façades small mud-brick fragments that were then distributed by water and compacted by trampling.

Different is the process that led to the formation of the phytolithes and spherulites levels and ash lenses of Facies C–D. These deposits resulted from ovicaprid dung and ashes which were discharged into the lane from domestic hearts. Since evidence of water transportation is absent, it is clear that they were re-distributed and compacted by trampling.

Therefore, two different contrasting processes determined the formation of the lane deposits:

- The re-working of the clay of the mud-bricks due to rain erosion (rain splash) and occasional water run-off;
- The re-distribution of the ash and ovicaprid coprolites induced by trampling during dry phases.

The repeated alternation of wet and dry seasons may have been the main factor responsible for the formation of the fills of the lane. Such cyclic alternations recur at least twenty times within a 63 cm thick stratigraphic sequence, which was investigated by means of nine consecutive thin sections (each one 7 cm high, cf. Fig. 4). Since the part of the section covered by thin sections corresponds to little less than a third of the whole sequence (ca. 2 m), the wet/dry cycles might have been approximately 70. A seasonal annual rhythm for the

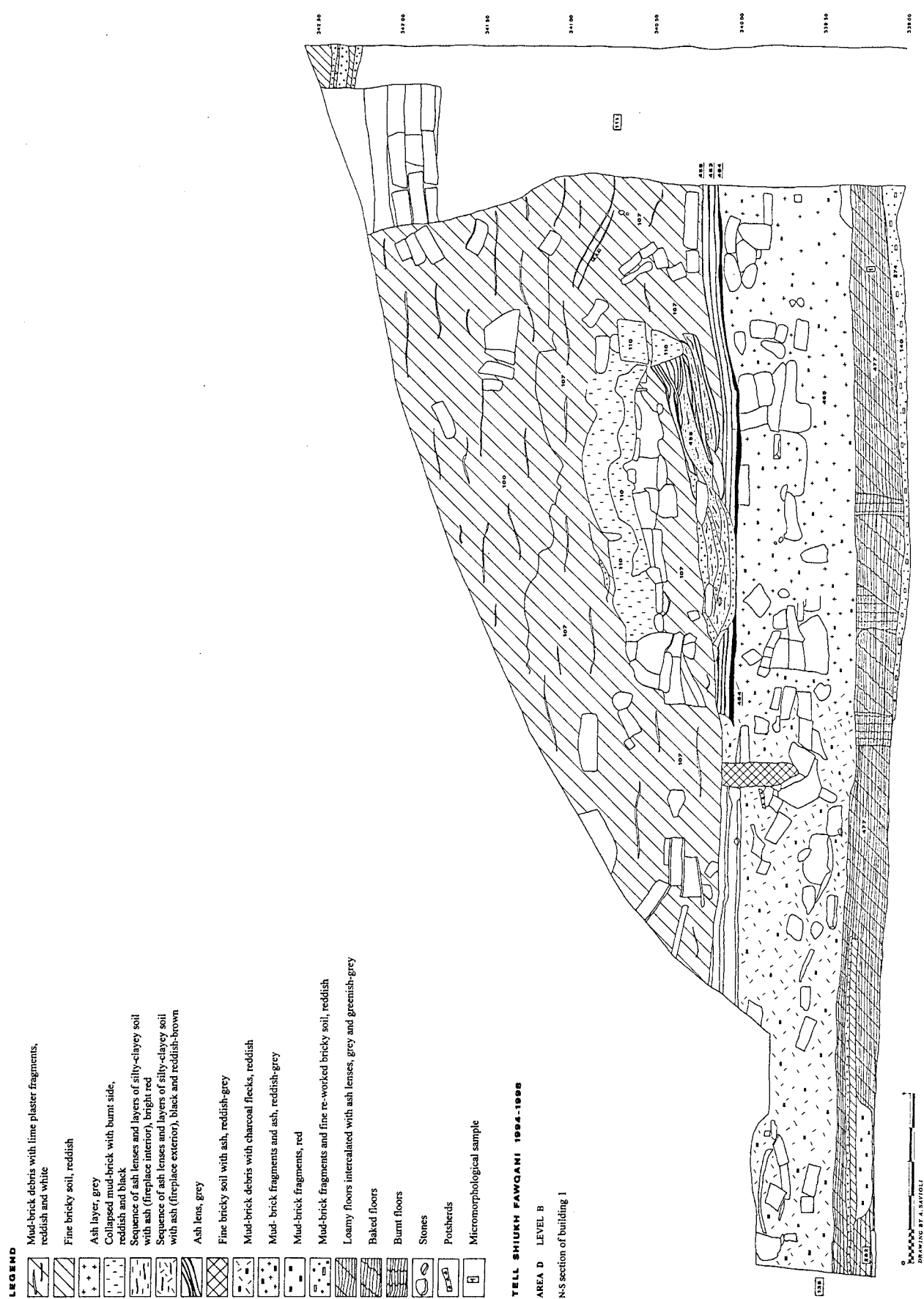


FIGURE 14. N-S section of Building 1 of level B with location of the analysed micromorphological sample.

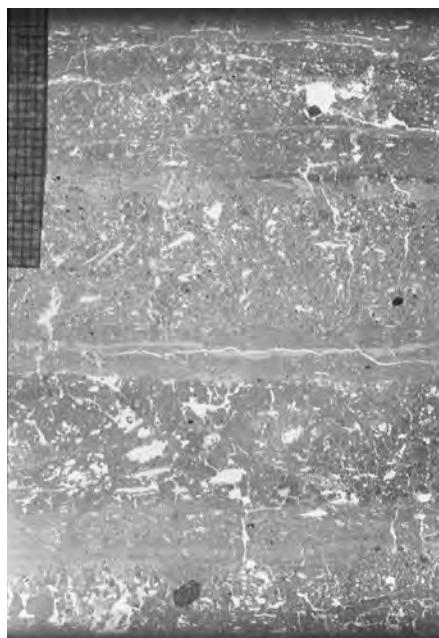


FIGURE 15. (far left) Thin section showing four floors plastered with lime belonging to the earliest phase of Building 1 of level B.

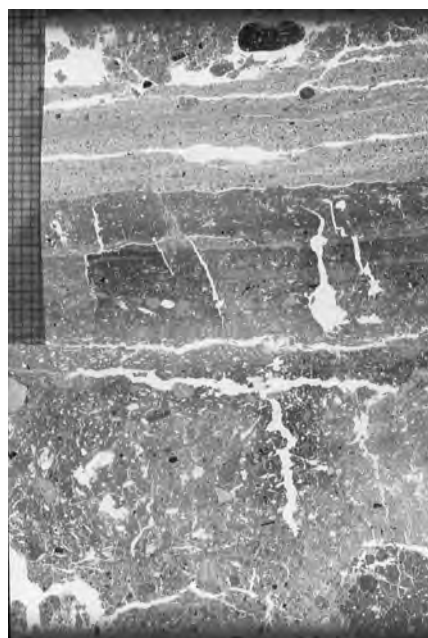


FIGURE 16. (left) Thin section showing three floors plastered with lime of a fragmentarily preserved building of level A.

deposition of the lane facies is strongly suggested by the high sedimentation rate of the deposits, which is related to their accumulation on a lane with slight longitudinal slope, and by the absence of steady surfaces within the sequence. Furthermore, the decided typological and technological homogeneity of the ceramic material and the small finds that were excavated in the level B stratigraphic sequence indicate a short life span of the streets and the adjoining domestic and public buildings and may be consistent with a duration of this part of the village of 70 years, as is indicated by the analysis of the fills of the lane.

The floors of the buildings

Two series of floors of buildings belonging to levels B and A were sampled for thin sections. Figs. 14–15 show a sequence consisting of a systematic alternation of four floors plastered with lime belonging to the earliest occupation phase of Building 1 of level B (Fig. 3). Each floor is lying upon a 1 cm thick preparation layer. Approximately twenty floors of this kind followed one another in a very tight 20–25 cm thick sequence. In thin section the floors consist of fine micritic calcareous material, often including angular fragments of soft limestone. The preparation layers on the contrary are made up of small irregular mud-brick fragments included in a fine matrix rich in voids resulting from vegetal inclusions, few phytolithes and small charcoal flecks. No domestic waste could be detected between one floor and the next. This probably means that before a new floor with its foundation was laid the surface of the dwelling was swept.

Very similar is the situation shown by Fig. 16, where three lime plastered floors with their preparation can be recognised. These floors belonged to a quite large building of level A, the last EBA I stratum, which unfortunately was very fragmentarily preserved due to the slope erosion of the surface of the tell. Interesting is the presence above the floors series of a laminated sand layer very rich in phytolithes and spherulites resulting from ash re-working by rain (Fig. 17). The lamination and distribution of the sand in poorly sorted lenses points to a colluvial origin for this layer, while the concentration of phytolithes and spherulites indicates a massive presence of ovicaprid dung. The laminated sand layer was covered by a

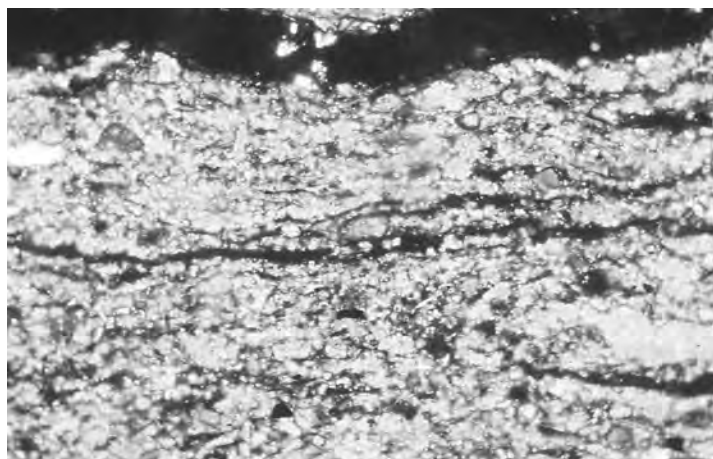


FIGURE 17. Thin section showing magnified spherulites seen with crossed polarised light (x100) from a fragmentarily preserved building of level A.

bricky deposit with large angular fragments of mud-bricks similar to those of facies A already observed in the fills of the lane (Fig. 16). The floors in use during the life span of the building of level A were covered during an abandonment phase by animal dung and later on sealed by a layer of bricky soil with vegetal temper, perhaps representing the foundation of a further floor.

Concluding remarks

Summing up, the following points can be made:

- The basis of the mound consists of a re-worked soil, which displays traces of deforestation by means of slash and burn practice and had probably been cultivated before the tell started to form with the foundation of the Late Uruk settlement.
- The fills of the lane of the EBA I village of level B were made up by thin trodden floors, colluvial levels consisting of small rounded fragments of mud-bricks produced by rain splash processes, and layers of ovicaprid dung distributed and laminated by trampling. The slight longitudinal slope of the lane, which was probably located in a relatively low part of the tell already in the EBA, accounts for a continuous rich accretion of debris and, therefore, for a quite high sedimentation rate, which prevented the mixing of the different micromorphological features. The alternation of dung laminae and small rounded brick fragments might be explained as a consequence of the seasonal succession of wet and dry periods over a time span of approximately seventy years, thus providing us with an extremely vivid perception of the cyclic pulsate of the seasons in an EBA village.

From the point of view of the late fourth-early third millennium palaeoclimate this indicates strongly contrasting seasons, as is suggested also by the evidence of slight rubefaction and clay formation in the soil at the base of the tell.

- Finally, calcium oxalate spherulites attesting the presence of ovicaprid coprolites are ubiquitous throughout the sequence. In the deposits of the lane spherulites are systematically combined especially with phytolithes, which represent the residuum of grass species. The association of phytolithes and spherulites can be interpreted only as an indicator of an assiduous movement of flocks of sheep and goats along the main street of the village. Sometimes the spherulites are found in isolated lenses and are occasionally associated to pseudo-morphic druses of calcite, the residuum of leafs and wood. In this case the spherulites derive

from ashes originating from the fireplaces of the adjoining houses, which had been swept into the trodden floors of the streets during the cleanings in the dwellings.

The large use of ovicaprid dung as fuel at Tell Shiukh Fawqani and its massive occurrence on the inhabited and used surfaces such as the building of level A and the street of level B are a clear indicator of the dense presence of ovicaprids in the village. The pivotal role played by sheep and goats herding in the economy of the EBA site has been indeed demonstrated also by the analysis of the excavated faunal sample carried out by Emmanuelle Vila. The archaeozoological record consists for more than the half of caprine remains (Vila in press).

In conclusion, at Tell Shiukh Fawqani the integration of archaeological excavation and micromorphological analysis made it possible to reach a better understanding of the formation, nature and significance of the archaeological deposits of Area D. Relevant new information could be obtained especially as regards the processual characterisation of built and unbuilt spaces, their use and function and the interaction between natural and anthropic processes. Finally, the case studies from Late Uruk and EBA I Tell Shiukh Fawqani represent also an example of how, in spite of the time constraints set by salvage archaeology, it is possible to combine archaeological work at the macro and micro, visible and non-visible scale also in a rescue excavation.

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Way, *aya ibur šāpûm*, must be understood correctly. The Processional Way was used for the *Akitu* festival, in which the images of the gods were carried along the street. The part flanked by high walls—on which a total of 120 lions are represented—was located outside the city wall, adjacent to the gate. The name of this street has been translated as “May the obdurate foe not stay in good health” (*a-a-i-bu-úr-šá-pu-um sūqu r[apšu]*).⁵¹ This is a curse laid on enemies. The fact that the entrance to the inner city was protected by the unique structure of defensive walls, as much as 7 metres thick on both sides of the street, indicates the nature of this part of the Processional Way as a fortified corridor extending from the Ištar Gate. The presence of the lions on glazed bricks along the walls of the Processional Way reinforces, in visual form, the apotropaic message conveyed by the name of the street. It is thus more likely that the symbolism of the three animals in this particular architectural

51. Gurney 1974: 44, 63/64; VAB 4, 88 no.8 ii 5, 114 ii 6; Unger, *Babylon*, 109; for translation, aSSCAD Š/1, under šāpû, 491–492ž

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The Afterlife of Tells

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Abstract

The typical perception of archaeological sites as fragments of a frozen past, and of the archaeologist as privileged interpreter of this past, is inaccurate and insidious: Sites often continue to play varied roles in the human landscape, serving as material, strategic, or symbolic resources; archaeology is only one way among many of using this resource. The reuse of sites and monuments in antiquity, and the various ways in which societies have incorporated ancient remains in their cognitive maps throughout history, are subjects worthy of study. As part of this continuum, archaeology needs to be constantly justified and defended as a way in which ancient remains are endowed with positive meaning in contemporary society.

Introduction

In the following pages I wish to reflect on the continuing presence of ancient sites—especially the most prominent ones such as mounds and monuments—in the landscape of the Levant. I will show that abandoned mounds and settlements continue, for the most part, to play a role in human affairs, that an understanding of the various ways in which ancient sites were used by subsequent generations provides insight into the values, environmental interactions, and cognitive maps of those societies, and that the study of the significance of abandoned sites since antiquity and until the present has profound implications for the way archaeologists should perceive their own role in society.

A typical view of the archaeologist's role in relation to ancient sites is grounded in the conception of ancient sites as abandoned places, frozen in time. At abandonment, these sites exit their "systemic context," to use Michael Schiffer's (1987) term, and remain subject only to physical processes of deterioration and transformation. Archaeologists, furnished by their discipline with the keys to the past, unlock the secrets of the site, revealing them to an awed and appreciative public (Bacon 1976: 11–15). The site undergoes a transfiguration, reentering the systemic context in the new role of a window to the past, and a symbol of the values associated with earlier eras of humanity.¹

This view is both inaccurate and insidious. It is inaccurate, because settlements seldom make a clean exit when they cease to be occupied. More often than not, they are woven into new contexts within the landscape, continuing to play a role in human affairs after the termination of their initial form of existence. It is insidious, because it encourages archaeological hubris: the axiomatic assumption of a privileged position by the archaeologist as

1. For representative characterizations of the archaeologist's role as interpreter of extinct societies, see, for example, Clark 1960: 17–73; Fagan 1983: 2–22; Courbin 1988.

interpreter of the past to an ignorant public. When a position is inherited, taken for granted, and perceived as a natural prerogative, it becomes not only morally suspect, but also entirely dependent on the preservation of the social conditions in which it initially emerged; it becomes fundamentally conservative and resistant to change.

An alternative approach to the afterlife of the tell and of archaeological sites in general identifies a continuum between past and present in the utilization of the abandoned site as a resource. Archaeologists represent the western, scientific mode in which sites are made significant for society, and part of its cognitive landscape. Once it is recognized to be located on a continuum, the role of the archaeologist retains no inherent superiority, but needs to be constantly redefined, justified and defended.

The Ancient Significance of Ruins

The place of monuments, megaliths, and abandoned sites in ancient landscapes has been the subject of serious discussion over the past decade or so. The way in which landscapes are incorporated into the cognitive maps of ancient societies, their function as an external representation of important symbolic associations, and the continuing process of re-use and re-interpretation, have been intensively explored, particularly by European geographers and archaeologists (e.g., Bradley 1996; Bradley and Williams 1998; Ashmore and Knapp 1999; Gazin-Schwartz and Holtorf 1999; Muir 1999). Topics studied include, for example, Anglo-Saxon attitudes to Neolithic barrows in England, medieval legends attached to Iron Age hillforts in Latvia, or the continuous reuse of megalithic monuments in Ireland, Sweden, and elsewhere.

Although the study of ancestral landscapes has yet to become a legitimate field of study in Levantine archaeology, the idea that people in antiquity had an awareness and an appreciation of the presence of antiquities and abandoned sites is not new in Ancient Near Eastern and Palestinian scholarship: Delougaz (Delougaz and Lloyd 1942: 21) and Jacobsen (Hill and Jacobsen 1990: 26–28, 61–64) commented on the importance attached by the Mesopotamians to the construction of temples on the remains of more ancient ones,² and statements such as the following, made in 1936 by B. Maisler-Mazar, represent a not uncommon topos in early 20th century biblical historical geography: “the Israelites were clearly aware that the foundations of their material culture were laid by the ancient inhabitants, and it is more than likely that ‘archaeological’ curiosity and no small wonder were aroused by the remains of the monuments of cultures that had preceded them” (Maisler 1936: 2 [my translation]).

This “romantic”, “unscientific” attempt to understand ancient cognition has, however, been eschewed by most practicing field archaeologists of the Levant, as it does not seem to allow proof or falsification by means of physical evidence. Furthermore, there has been, generally speaking, a relentless focus on origins, on the *urtext*, at the expense of later contexts of meaning. The most potent expression of this focus is the very language we use, the attitudes embedded in our terminology. Which of us has not sought to penetrate through the veils of “disturbance”, “reuse”, “secondary deposition”, “stone-robbing” and “contamination” of the abandonment phase, in order to reach the “clean”, “secure”, “in situ”, and “original” foundations of the occupation phase.

2. In a lecture delivered in Jerusalem (26/12/1985), Jacobsen attributed the peculiar substructure of the temple at Ishchali to the prerequisite for physical remains of earlier temples when constructing a new Mesopotamian temple. Without such remains (or a surrogate substructure within new temple-podiums) the purity or hallowedness of the temple could be impaired.

Tells as Resources

The study of the construction and meaning of the built landscape is based on the realization that the very circumstances of reuse, disturbance, and stone-robbing can and should be an important field of inquiry, and can inform us of the way different societies through history interacted with the past and incorporated their environment in their world-views. This incorporation and recomposition of the landscape is a constant, unending process. During this process, some abandoned settlements and sites become reabsorbed, so to speak, in the natural environment, but many do not; rather, they become *resources*: material, strategic, or symbolic (these categories are not mutually exclusive, though generally a clear preference for one over the others may be observed at different sites or in different periods.)

By *material resource* I mean that the abandoned sites themselves provide later groups with physical components curated and used in new contexts, such as stones for new construction outside the ancient site, organism-rich soil for fertilizer, precious metals for recasting or for sale, architectural pieces used to embellish gardens and buildings, etc.

By *strategic or functional resource* I mean that the site—especially if it is a tell or is otherwise prominent—becomes a landmark, serving as a meeting-place, a temporary shelter, a lookout post, or any similar function involving minimal modification of the ancient remains.

By *symbolic resource* I mean that sites become repositories of symbolic content, and part of a web of meaning inscribed in the landscape. Legends may be attached to sites, or they may become cemeteries through association with holy persons or with the underworld. They may also become ideological symbols of various sorts.

A better understanding of the afterlife of tells and other sites, or, more precisely, their rebirth as resources, can make significant contributions to archaeological interpretation in various realms; for example, the study of reuse. There are, of course, many kinds of reuse: some seem to be purely opportunistic, others—and these are the more interesting—suggest a resonance between “old” and “new” perceptions. In some periods, for instance, *reuse of tombs* is common. Although there has been some comment on the possible significance of such reuse in the Levant (e.g., Ilan 1995; Gonen forthcoming), I am not familiar with any case where this has been the main focus of study. What was it that lay behind what has been called,³ after Gadamer, “the fusion of horizons” that allowed one group to use the tombs of an earlier group, often far removed in time? Was it merely a matter of convenience? This seems unlikely. People usually spare no effort in providing the “right” kind of burial for their kin. There was some deeper connection at work here, an affinity felt to the earlier usage. Some insight into the quality of these affinities may be gained by considering cases such as the careful reuse of an intact Jewish burial cave at Akeldama in Jerusalem by Byzantine-period monks (Avni and Greenhut 1996: 36), or even the secondary interment of the prominent Zionist leaders Yehuda Pinsker and Menahem Ussishkin in the Roman-period Tomb of Nicanor on Mt Scopus (Avigad 1967: 119–124).

Taking the Bronze Age dolmens of the Jordan Valley as a case in point, there has been no end of discussion on the chronology and the social context of their construction, as well as on the significance of these megalithic markers in their original landscape (e.g., Epstein 1985; Vinitzky 1990; Zohar 1992; Prag 1995). But what happened after the Intermediate Bronze Age, when the megalithic dolmens were no longer being built? They remained a

3. E.g., by H. Karlsson, in describing several phases of use in the mortuary site of Ekornavallen, Sweden (the Annual Meeting of the European Association of Archaeologists, Bournemouth 1999).

prominent part of the landscape. They were, in some periods, by certain people, reused for burial, but in other periods not.⁴ Clearly, the study of the history of their reuse can be most instructive as to the ideologies and attitudes of later groups toward death, territoriality, and perhaps towards earlier occupants of the area. A long-term history of dolmen-use remains to be written.

A second example, this time of the tell as a material resource, is provided by the long history of the use of mound-soils as land-fill and fertilizer. This has been documented for various periods in the Near East (Wilkinson 1982, 1989, 1994), but I wish to focus on a curious version of this activity: the so-called 'Pittsburghs'—early Persian period strata represented by the intensive pitting of mounds in Israel (e.g., the major mounds of the northwestern Negev [Stager 1971]; Tel Mevorakh Str. VI [Stern 1978]; Tel Michal Str. XI [Herzog 1989]; Batash Str. I [Mazar 1997]. This widespread phenomenon has, to the best of my knowledge, no equal in any other age, nor has it been given a convincing explanation—suggestions have ranged from storage, to soil-quarrying, to waste disposal (Stager 1971; Goffer, Molcho and Bet-Arieh 1983; Herzog 1989: 91; Mazar 1997: 223). Usually considered a stratigraphic annoyance by archaeologists of the Iron and Bronze ages (though sometimes a virtual gold-mine of small finds), little systematic attention has been given to the pitting phenomenon—and this is indeed surprising in view of the great similarity it has to modern archaeological practice. Attracted to long-abandoned settlement sites, people of the Persian period probably had a fairly clear notion of what they were to expect on the site, and kept coming back for more of whatever it was they were after. Moreover, these early excavators appear to express an attitude of distancing toward the earlier life of the tells, using the sites in an entirely novel way. Thus, although technically representing the beginning of the last phase of use on many Bronze and Iron Age mounds, Persian pits might be profitably studied as independent, post-abandonment phenomena.

Moving on to later periods, insight into the strategic and symbolic resources afforded by ancient sites can be provided by the study of traditions and legends attached to sites by the indigenous people of 19th–20th century Palestine (this is a vast and unmined field of research; I will here allude only to a few general examples). The practice of establishing cemeteries on tells and within the precincts of ancient ruins is very common among the beduin; this tendency has been attributed to the prominence of the tell in the landscape and to its territorial neutrality, to the presence of fellow spirits within the mounds, and to the proximity of well-built houses, which might be claimed at the time of resurrection (Bar Zvi, Abu Rabbia, and Kressel 1998: 168). In Tewfik Canaan's 1927 study, *Mohammedan Saints and Sanctuaries*, a strong correlation is noted between Muslim shrines and ancient ruins, as well as numerous attestations of the potent presence of spirits (djinn), associated with ancient tombs, wells and cisterns (Canaan 1927: 9–10). The relation between traditional Jewish shrines and antiquities is noticeably less marked, though there are some prominent examples of the attachment of popular veneration to ancient monuments, including to pagan sarcophagi near the Roman temple at Qades in the Galilee (observed in 1991; see Eisenstein 1969: 79, 331)! These practices and legends attest to the vernacular identification of scores of ancient sites and to their incorporation into the sacred and ancestral landscapes in a pre-scientific age.

4. Epstein (1985) reports on considerable MB I (traditional MB IIA) finds in reused dolmens, scant evidence for early MB II, LB I–II, and Iron II, and no evidence for middle-late MB II or Iron I.

The use of ancient sites as resources continues into modern times. Tells still function as physical resources for farmers and earth contractors. They are strategic resources for the military, and landmarks for hikers. They can serve as rallying-points and repositories of symbolic capital for nationalist politicians or fundamentalist millennarians. Real estate speculators covet them as ideal locations for housing estates, and local tourist councils as settings for time-travel fantasies. Villagers employed by antiquities dealers mine them for trinkets and the occasional inscription, to sell to tourists or unscrupulous scholars. Archaeologists are a part of this web of interests. They might claim to be objective, neutral observers, but who will believe them? They are, after all, no less a part and product of their society than the contractors and tourist entrepreneurs.

Archaeological sites are the prime resource of archaeologists. They provide them with material for academic promotion, objects for “show and tell,” and excuses to spend large parts of the year away from home. There are, of course, loftier ideals: furthering the knowledge of human and social origins, preserving the heritage, revealing and celebrating the great variety of human experience. But are these always foremost? And when they are, are they shared by society at large? Is it self-evident that they should be preferred over, say, the construction of a clover-leaf interchange, or, conversely, absolute preservation? Is excavation always the default value?

These are issues that have to be met head on. If archaeologists will not define and justify their use of the tell as a resource, if they will not make their priorities a matter of public interest, they should not be surprised to find their legal authority curtailed, or themselves excluded from their role as mediators between societies and the physical remnants of the past. If, however, they descend from the pedestal of privileged interpreter, and invite the public to observe the way in which the ancient sites are woven into a relevant, subjective, narrative, they will also recognize that they represent but a stage in the ongoing redrawing of society’s cognitive map (Walsh 1995).

Conclusion

A significant transition in the history of tells and monuments occurs at abandonment. At this point they stop functioning in their original capacity, and take up a new role as a resource, material, strategic, or symbolic. Human activity at these sites can resonate with the earlier use—as in the case of reused tombs—or it can be merely destructive. In special cases—when they become sacred, or when they are excavated by archaeologists—ancient sites are accorded a role in the construction of a meaningful, “thick” landscape for the societies concerned. It is the role of the archaeologist not only to describe this process but to reflect on his or her role within it, and promote the positive use of site resources for the furthering of values such as the dissemination of knowledge about human and social origins or the celebration of diversity.

This role is not inherited or taken for granted; it is one that must be achieved and defended. By studying the way earlier generations incorporated the ancient landscape into their world-view, we can reflect on our own modest role in the construction of the landscape of present-day society.

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Archaeological Stratigraphy. Analysis and Interpretation of Ancient Near Eastern Settlements. A Summary¹

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The workshop was intended to continue the on-going debate about stratigraphic methods in archaeology. A call-for-papers went out and participants chose their own themes; there was no attempt to organize a common editorial line, and other papers submitted to the conference organizers but linked to the theme of stratigraphy were drafted in. The idea was to discuss any themes relating to stratigraphy relevant to archaeological excavation and interpretation. In the event, the papers delivered can be summarized as having covered two separate aspects of archaeological stratigraphy: (1) demonstrating the value of detailed stratigraphic analysis in excavation and (2) stratigraphic excavation techniques. There was, therefore, no discussion of the conventional stereotype of stratigraphy as a means of organizing typological assemblages in chronological terms. This discussion simply defines those aspects which the writer considers to have been common and relevant points in the papers, rather than representing an exhaustive discussion of all the points raised.

The theoretical issues were identified and discussed in three papers, by W. Matthews, D. Morandi and I. Sharon (see below p.00).

The workshop commenced with a paper by W. Matthews on the principles and methods of micromorphology. She emphasized that micromorphological methods had a wide range of uses and could contribute to many different aspects of the interpretation of site formation and to identify use-patterns. This means that analysis can proceed far beyond the level of distinguishing occupational deposits from fill, enabling experienced experts to determine frequent movement, the presence of animals, particularly clean areas, etc.

This theoretical presentation with many examples was complemented by D. Morandi's paper on the specific case of the excavation at Tell Shiukh Fawqani. There, micromorphological analysis was included among the stratigraphic tools employed by the excavators. This demonstrated that a deeper understanding of site formation and use patterns could complement the traditional goals of stratigraphic analysis, giving the history of the site more depth.

1. A Workshop/Symposium arranged by W. Matthews & D. Warburton. Participants:
Micromorphology (W. Matthews)
Postprocessual Stratigraphy (I. Sharon)
Tell & Environment at Shiukh Fawqani (D. Morandi)
Complex Stratigraphy at Merv (St.-J. Simpson)
Tell Excavation Strategy (D. Ussishkin)
Stratigraphic Excavation Strategy (H. Kühne)ž

I. Sharon discussed the realities of stratigraphic excavation, recording, publication and interpretation. His point of departure was the idea that “post-processual” approaches had generally been adapted for the interpretation of questions relating to the “big issues” of archaeology but that the idea could also be valuable on a practical level. He emphasized that none of us invariably excavates perfectly. He also demonstrated that the careful analysis of published sections could reveal that an apparently entirely clear stratigraphic section could be interpreted entirely differently than the interpretation offered by the excavator. This meant that in the case of Jericho a different depositional sequence could be proposed. Such an interpretation should necessarily lead to a re-interpretation of the history of the site in ordinary typological and historical terms. This demonstrated beyond any reasonable doubt that stratigraphic excavation techniques and recording must be refined, since it showed that the traditional approaches were unable to solve the traditional questions, quite aside from being unable to answer the questions of the coming years. Both the excavation techniques and the interpretation require scrutiny.

These three papers thus set the stage for the review of excavations as such, rather than the interpretation of the deposits.

St.-J. Simpson’s presentation of the excavations at Merv demonstrated that vertical sequences could not invariably be employed to analyze stratigraphic relations. The correlation of deposits in different parts of the site presents a challenging problem of “horizontal stratigraphy” which cannot be resolved using trenches as all the deposits are vertical accumulations but deposited at different times and under very different conditions (including occupation, construction, and decay as well as the intentional removal of deposits, along with deliberate leveling and filling). The size of the site and the fact that material was clearly transported from one part of the site to another meant that extreme caution and careful recording were essential if the history of the site was to be unraveled. Although he did not say so, he demonstrated that even the most meticulously excavated 20 x 20 m square could not answer any relevant question at this site.

D. Ussishkin covered a number of aspects of large scale excavation. He laid out a valuable list of principles which included at least two points of fundamental stratigraphic importance. One of these was that anyone continuing an excavation abandoned by another scholar should carefully examine both the documentation and trenches of that scholar before commencing. This should allow the later excavator to identify questions which the previous excavation left unanswered and aid the later excavator in understanding questions raised by the previous excavation as well as those which may have been either answered or demonstrated to be unanswerable. Even if the earlier work was unsystematic, the trenches can still serve as (admittedly unintentional) sondages. Among the other points was an admonition that one should always leave something behind. If one can demonstrate that a fixture is symmetrically constructed, it is probably better not to excavate it, on the assumption that the next generation may have other questions and other methods.

H. Kühne discussed methods of stratigraphic excavation employed at Tell Sheikh Hamad. His object was to emphasize that the excavation method should be based on isolating the smallest common deposit. He terms these “*Fundstellen*” in German. The editor agrees with Kühne that his usage does not correspond to any of the conventional uses of “locus”, and therefore suggests that the term corresponds to “(depositional) feature”. The concept of gathering the material in such a feature is thus similar to the concept of “batch”, “bag” or “lot” as used by other archaeologists. The difference being that his excavation method is based on the units being linked to “layers” (German “*Schichten*”) which are also archaeologi-

cal deposits and not defined by the architecture. The method thus varies from that of other large scale archaeological excavations in that the “construction levels” do not play a prominent part, and thus the whole scheme is depositional, while a serious effort is made to distinguish both excavation units and stratigraphic “layers”.

The papers thus suggested several fundamental conclusions

1. Only large-scale excavations can promise significant answers for general questions relating to human history.
2. Only detailed micromorphological analysis of numerous samples can confirm possible speculation about site formation and use patterns.
3. Attempting to correlate the stratigraphic sequences within a single site cannot be accomplished using trenches.
4. Any excavation must be meticulously recorded in order to exclude the possibility of significant and avoidable stratigraphic errors. Different possibilities should be considered during the excavation. The excavation should strive to isolate the smallest possible units so as to assure that subsequent interpretations can be modified without having to relinquish carefully excavated material. Any excavation should benefit from the maximum possible consideration for the questions to be posed and the means of answering them with the available resources.

It is improbable that any of the participants would disagree with H. Kühne's intention of isolating the smallest units. The issue is developing an excavation technique which is most suitable to achieve this object, while simultaneously allowing large-scale excavations to proceed. The difficulty is not invariably isolating the feature, but rather excavating any feature separately after having recognized it, and thus systems must strive to develop methods which can assure that the deposits are recognized and excavated.

A detailed analysis of the micromorphology could provide virtually indisputable data about site formation and use. The identification of grains and run-off patterns could reveal which parts of a site were exposed and during which seasons. This could be complemented by the distribution of debris. The analysis could leave no doubt about issues such as animal husbandry, open courtyards, “holy zones” and other features which have hitherto been subject to speculative pseudo-analysis rather than scientific examination.

The method for correlating specific sequences within a site must be the same as that employed between sites, i.e., comparisons based on meticulous recording. This is probably the only means of resolving the conflict between maximum exposures and maximum analysis. Experience has repeatedly demonstrated that (a) sections cannot be analyzed after the excavation unless the stratigraphy was fully understood during the excavation and (b) that trenches designed to establish stratigraphic links usually fail due to breaks in the stratigraphy.

This necessarily means that the material must be separated during the excavation, i.e., recognizing and separating the “smallest possible units”. This demands that the stratigraphy be understood before the removal of the deposits: the stratigraphic analysis must precede (rather than follow) the excavation. Yet, efficiency demands that compromises be made when seeking an excavation strategy. Only major exposures promise to answer major questions. On the other hand, any neglect of minor details—from micromorphology to stratigraphic deposits—is destined to undermine the value of the excavation, even if the recording was meticulous. Meticulous recording is rendered increasingly difficult in large operations,

and yet the only links are likely to be established from the records and not the layers which are usually disrupted.

It is clear that analysis of the micromorphology must be accorded the same significance as that of small finds and pottery. More excavations should take samples, and additional facilities and scholars equipped to analyze them. Samples of different types of deposits should be available for comparison.

Micromorphology can promise that the formation of deposits can be understood, but the method cannot resolve the other issues central to archaeological stratigraphy, such as correlation and chronology.

The workshop did not face the fundamental issue of typological correlations within a site and between sites. It is clear that micromorphological analysis of samples can indicate whether or not the context from which any given typological artifact was disturbed.

Stratigraphic excavation techniques and analysis must continue to be discussed, while developing new methods of analysis and interpretation.

'Tell' Stratigraphy: A 'Post Processual' Alternative?

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Abstract

It is rather curious that the theoretical discourse between 'processual' and 'post processual' archaeologies has taken place mainly in the realm of high-level theory, while low-level stratigraphic and typological/attribute analysis has hardly been affected. The backdrop to the processual-post processual debate is the demise of the logical-positivist philosophy, and the rise of 'anti-realist', 'post-modernist' and 'sociological' definitions of science. That battle, however, was fought mainly on issues of *low level theory*.

This paper will argue that the construction of a stratigraphic scheme is not a detached observation of an 'archaeological record', but rather a creative interpretational process. Case studies will be cited to demonstrate that historical interpretations and views of the nature of the culture being dug *affect what is observed and recorded in the field*. Moreover, without assumptions and presuppositions on the part of the excavator as to the motivations and behavior of his ancient subjects *no intelligible interpretation* of the depositional sequence of the site would be possible.

We do not mean to advocate a nihilistic 'anything goes' approach to stratigraphic analysis—but argue that the inherent limitations of the materials we are working with and our own human understanding should be taken into account and integrated in the way we view the evidence, analyze it, and report it.

Introduction

The theoretical discourse between 'processual' and 'post processual' archaeologies has taken place mainly in the realm of high-level theory (i.e., the explanation of broad patterns in terms of inclusive theoretical frameworks). Questions were raised as to whether there exists a single privileged ('scientific') view of the past and of the motivation of human behavior and culture, and whether mechanistic cause-and-effect models can adequately describe and explain the changes in human endeavors which constitute 'history'.

This is a rather curious situation. The backdrop to the processual-post processual debate is the demise of the logical-positivist philosophy and the rise of 'anti-realist', 'post-modernist' and 'sociological' definitions of science. The latter dispute, however, was fought mainly on issues of *low level theory* (how observations are transformed to 'data' and how patterns are detected)—focusing on topics such as whether 'objective observation' exists, or whether there is a dichotomy between 'data' and 'theory'. Low-level data acquisition in archaeology (stratigraphic and typological/attribute analysis) has arguably been least affected by the perturbations of grand theory—and even disciples of the 'post processual' persuasion routinely view the 'stratigraphic record' through a positivist spy-glass.

This paper will argue that stratigraphic analysis is a far cry from a detached observation of the 'archaeological record'. Indeed the very view of archaeology's information base as a 'record' which can, in theory, be objectively 'read' by persons possessing the proper decryption-code is a sad misnomer. Rather, the construction of a stratigraphic scheme is a creative interpretational process—jointly manufactured by the ancients who left scars of their activities in the dirt, and the excavators (at all levels—from the pick handlers to the director, report editor, and reader).

I shall attempt to demonstrate that, even in the best of cases, historical interpretations and views of the nature of the culture being dug *affect what is observed and recorded in the field*. Moreover, it will be argued that *without* assumptions and presuppositions on the part of the excavator as to the motivations and behavior of his ancient subjects *no intelligible interpretation* of the depositional sequence of the site would be possible.

The arguments above are not meant to advocate a nihilistic 'anything goes' approach to stratigraphic analysis—but to argue that burying our heads in the sand, and insisting on ever more restrictive procedures and vocabularies, won't get us to the 'blessed state of objectivity' either. The inherent limitations of the materials we are working with and our own human understanding should be taken into account and integrated in the way we view the evidence, analyze it, and report it.

A whimsical analysis of the Middle Bronze Age fortifications at Jericho

I have chosen to illustrate my arguments with a second look at a classic: part of Dame Kathleen Kenyon's Section I, Trench I at Jericho (Fig. 1; Kenyon 1957: fig. 4 and 1981: pl. 238). Let me state at the outset that this section-drawing, Kenyon's excavation at Jericho, and the 'balk and debris' method this excavation is taken to best represent are the *subjects* of my critique—not the *objects* of it! They were chosen only because they are familiar to every student of Near Eastern archaeology. Indeed I have argued along similar lines (Sharon 1996: 259–266; 1999) using examples from Beer-Sheba (Aharoni et al. 1973; Herzog 1984), sometimes cited (Aharoni 1973; Dever 1973, 1980; Chapman 1986) as a type-site for the so-called 'Israeli' or 'Architectural' excavation method. I would venture to say that similar charges may be made at *any* excavation.

Case-in-Point (1): Figure 2 is an enlargement of one part of the section. If we examine the volume of dirt which Kenyon labels 'lxi', we see successive designations 'small rubbly', 'fallen bricks', 'soft brown dark', 'dark brown', etc. *all within the same deposit*. Were all these different designations dug as a single deposit? Even if some distinctions *were* made in the field, subsequently all of the artifacts from these sub-deposits were lumped together and are all published as 'layer lxi'. Thus, even if we have reservations we are the prisoners of the excavator's interpretation.

Chapman (1986) argues that using 'a room' (and, presumably 'a rampart') as an excavation unit is unscientific, because it is loaded with the excavator's preconceptions, whereas 'a deposit' is a purely observational unit, and hence 'scientific'. The strict separation between observation and interpretation, and the belief in the primacy of the former, is one of the central tenets of the logical-positivist philosophy of science. Kaplan (1964: 131) has called this 'the dogma of immaculate perception'.

But what is 'a deposit'? the entire rampart? (Note that 'a rampart', like 'a room' is not a depositional unit—it is defined by the *intentions* which *we impute* to the people who built it.) Any color patch within a single hue on the Munsell scale as seen at high noon? A single clod

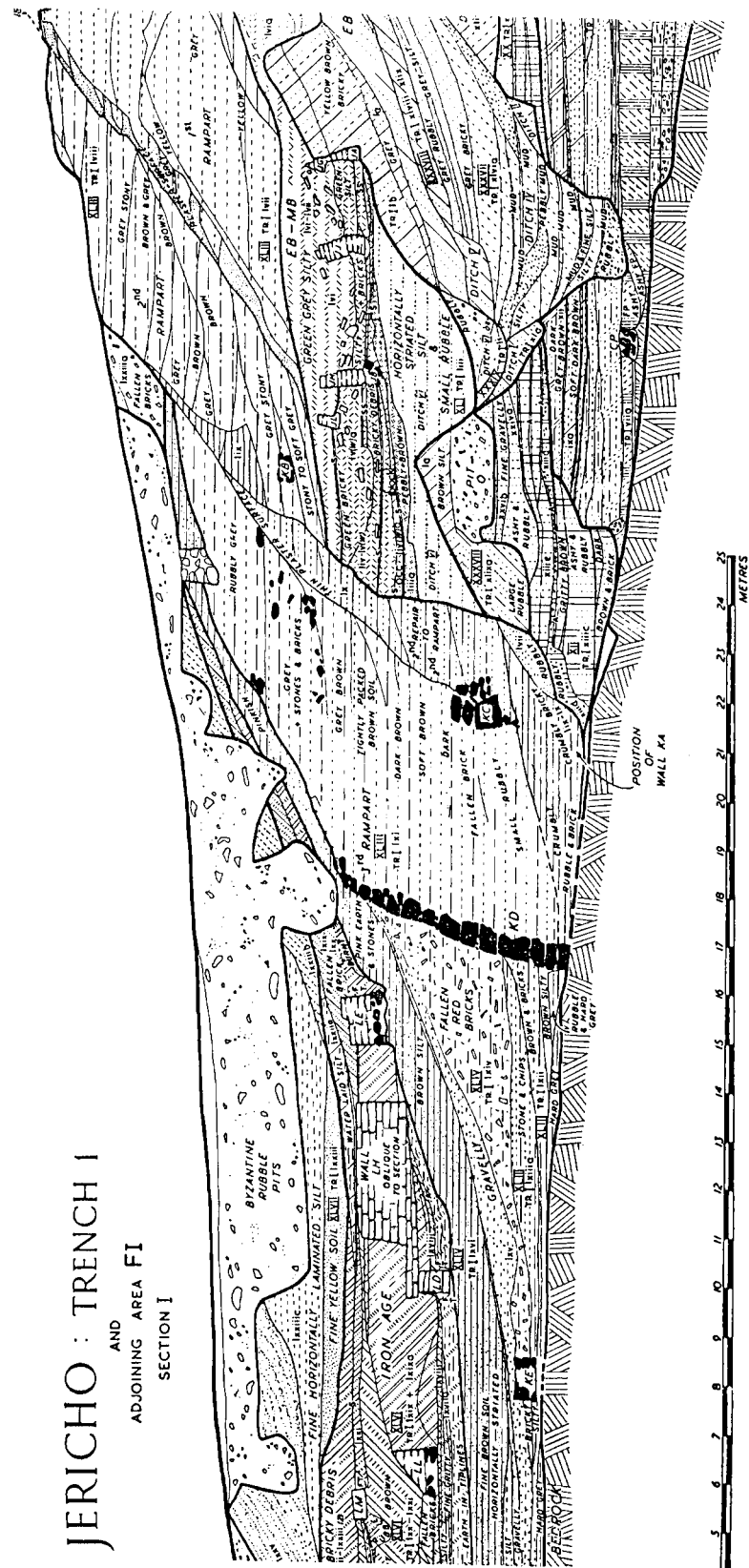


FIGURE 1. Jericho, Kenyon's Trench I, Section I, as published.

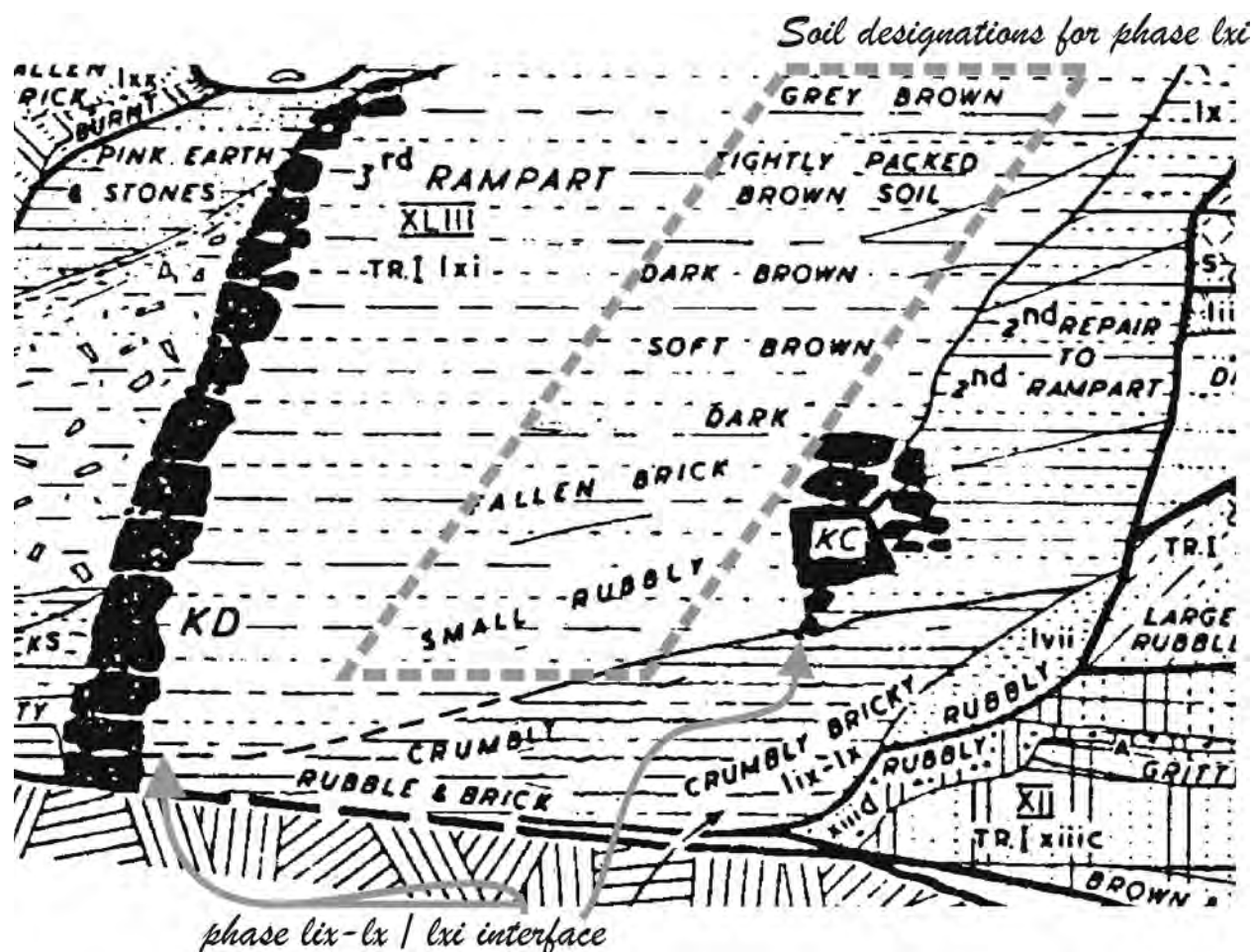


FIGURE 2. Jericho, Detail of Section I.

of dirt? Any difference in the average grain size or composition when 1000 randomly-selected grains are examined under a X20 bifocal microscope? In the end analysis, 'a deposit' is *what the excavator thinks* was deposited in one action. Again—we are second-guessing the ancients' intentions!

Ergo: 'Deposits' are not objective, observational units!

Case-in-point (2): Next, let's look at a single line in the balk drawing: the line separating level lix-lx (fig. 2), belonging, according to Kenyon, to debris falling off the '1st rampart' during its destruction and level lxi, of the '3rd rampart' between walls KC and KD (consult Fig. 3 for a simplified representation of the depositional sequence, according to Kenyon). We see that as this line approaches wall KD, it turns from a bold, full line, to a dashed line. Now, Kenyon rarely had any doubts about the interface lines between her deposits. As a matter of fact, this particular surface is *the only one in the entire balk to be depicted by a dashed line* (other than purely technical ones such as interfaces passing below walls which had not been removed). Thus we may be justified in asking why this particular interface was unclear to Kenyon.

If we follow the dashed line through it appears that it *reaches* wall KD. Thus the deposit under it (lix-lx), was deposited *after* wall KD was built, or, at the latest, concurrently with

that event. That is, it belongs to the '3rd rampart'. However, the other edge of that same interface clearly goes *under* wall KC, i.e., it precedes its construction. Now, wall KC defines the '2nd rampart' and hence the deposit under the interface in question *must* precede the second rampart. We have us a classic case of 'circular stratigraphy' where $lix-lx < KC < lix(KD(lix-lx$ and therefore $lix-lx$ is later than itself! The only way out of this contradiction is to disregard one of the observations—either the surface does not reach wall KD, or it does not go under wall KC. Kenyon chose the former, and drew the line accordingly.

I can't say I blame her, my interpretation would have been exactly the same. The point is that this line is the only one drawn in as 'uncertain' not because it was the only interface not perfectly sharp to Kenyon's eyes as she stood drawing her main balk, *but because she must have realized that drawing it any other way would lead to a contradiction!*

Ergo: Rather than the observed facts guiding us deductively towards uniquely-true theories, it is theoretical considerations (in this case the logic of the way the ramparts should-have-been constructed) which condition the way we observe!

Incidentally, the fact that the entire reading of the balk and the subsequent grouping and ordering of deposits may depend on our decision of whether a certain ephemeral surface touches or does not touch a single stone, gainsays the notion that the use of ever-smaller excavation units will of necessity make for a more objective stratigraphy (Warburton 1998). Two archaeologists may agree on the spatial position of every single sherd and stone in the excavation, and yet completely disagree on the interpretation of the stratigraphy. On the contrary—sometimes a wider exposure (*even at the price of loss of meticulousness*) might demonstrate that a relation which was problematic at one point is very obvious at another.

Case-in-point (3): Let us now move from the particular to the general. Kenyon's reading of this balk is that it shows three consecutive systems of earthwork-fortifications ('rampart 1'–'rampart 3') plus some pre- and post-rampart phases. Her stratigraphic sequence is illustrated in Fig. 3. But is this the only possible sequence supported by the evidence? Fig. 4 shows one (out of many) different permutations of the same set of super-positional relationships. Why did Kenyon choose one particular sequence out of the myriad? I contend it was *because she assumed* she was looking at a sequence of earthwork-fortifications, of the type she knew and had excavated in Medieval England. This, in turn, is based on the current view at her time, that Middle Bronze Age earthworks in the Levant and in Egypt were built by the 'Hyksos', who were "... a people of Indo-European origin who ... combined [with Semitic 'Habiru' outlaws] to form warrior bands. . .[which] . .would be[come] a ruling warrior aristocracy, not unlike the Normans in England, . .[and they then] penetrated into Egypt in sufficient numbers to overthrow the decadent Middle Empire" (Kenyon 1957: 222–223).

The sequence presented in Fig. 4 was consciously manipulated to fit a contrary theory—that Middle Bronze Age earthworks were primarily battering and terracing operations, designed to raise and enlarge flat platforms, upon which imposing public edifices were built (e.g., Finkelstein 1992, Bunimovitz 1992).

Again, I have nothing against this sort of assumption. We all use them and their ilk on an everyday basis in any excavation. Nor am I trying to promote the Finkelstein/Bunimovitz theory over Kenyon's. Indeed, I regard both to be superior to any number of other possible permutations which respect the excavator's recorded observations to a similar degree but have *no* external rhyme or reason. The point is that the choice of one stratigraphical scheme over another stems, more often than not, from *cognitive* considerations—involving *assumptions* about *why* these features were built and *what* they were used for.

Ergo: the excavator's intuition of what it is that the ancients were trying to accomplish affects the 'reading of the archaeological record' (the balk, in this case), just as much as the deposits themselves determine the 'order of deposition' we read into them.

It is here that we run afoul of another dictum of positivist science, and it's archaeological manifestation, processual archaeology: The view of science as a law-generating and law-abiding activity. Again, the theoretical literature about stratigraphy abounds with examples. Stein (1987: 341) argues that "... processes responsible for creation [of archaeological deposits] ... are related by laws of physics and chemistry, which operate uniformly through time and space ... defined by continuum mechanics and atomic theory" while Schiffer's (1972; 1976; 1987) 'transforms' and Harris's (1979a; 1979b) 'laws of archaeological stratigraphy' are attempts to formulate just such. Statements like "glacis surfaces should be steep if they are to hamper attackers from scaling the walls" or "It's good to build conspicuous monumental structures on high, flat platforms" are perfectly sound common-sense propositions, but we can hardly claim for them the status of laws-of-nature derived from "continuum mechanics and atomic theory".

Case-in-point (4): Let us return for one last look at the Jericho section. Note that two separate deposits, are designated by the excavators as level 'lvii'. According to Kenyon's interpretation, the first fortification system consisted of 'rampart 1', a 'berm' and a 'cut'. Therefore deposits at the bottom of the 'cut' were considered contemporary with those at the top of 'rampart 1', and were thus labeled and excavated together.

We've already noted that this is far from the only possible interpretation. It is possible that the 'cut' is later than 'rampart 2' and hence deposits in it are even later. If we try to verify this alternative hypothesis by examining the finds from 'rampart 1' and comparing them to those of deposits at the bottom of the 'cut', we find that pottery was published according to 'level' designation alone. Thus we have no hope of segregating the finds from either deposit!

Ergo: The Jericho excavators, by virtue of their belief that theirs is the only possible 'correct solution' to the 'reading of the section', have left us with no possibility of checking it!

The Sherlock Holmes dictum that "After the impossible has been ruled out, the only solution left, however incredible, must be the truth" rarely works in real-life situations. If the only solution left is incredible, one would be justified in doubting the impossibility of alternatives. Given that some times there is *no* way to plausibly account for all our observations in the field, and that often there is *more than one* stratigraphic scenario which fits the observation to a similar degree, how, then, does one choose a preferred explanation from among alternatives? One might argue for simplicity as a criterion (i.e., -all other things being equal, a phasing scheme with less phases in it is preferable to a more intricate one); or for plausibility (a phasing scheme which 'bends the rules' or makes [possible but] incredible assumptions is inferior to a straightforward one); or for comprehensiveness (a phasing scheme which can be fitted to all excavation areas of the site is preferable to a set of schemes assuming a different occupational history for each excavation area); for agreement with some external theory, or for sheer elegance. Note, however, that none of these criteria necessarily have anything to do with *historical truth*. The way things *really* happened—the *true* order of stratification—may well have had 'redundant' phases, some *incredible* episodes, and had been *different* at each point at the site; it almost certainly was not as neat and elegant as our theories would wish it to be.

I hope these examples will suffice to show that *as usually practiced* stratigraphic inference in archaeology of complex sites is not wholly objective. It is to a certain extent dependent on the particular point of view and pre-conceptions of the excavator and its units are not purely observational. Stratigraphic rules of inference are *not* immutable laws, and finally—the ‘correctness’ of a stratigraphic sequence is not synonymous with the ‘truth’ of the presumed sequence of events.

The price of objectivity

To a determined positivist the arguments above merely indicate that archaeology *as it is practiced* is not yet scientific enough. The appropriate positivistic retort would be that we need to measure more attributes with greater refinement, operationalize and define our terminology even more (e.g., Gasche and Tunca 1983, Warburton 1998), and ruthlessly ostracize any use of rules of inference which are less than immutable laws of nature. At this point we come to the next level of my case—suppose, for the sake of argument, that such a program *might* lead to greater scientificity—is it worth the price?

The price tag might come in various forms. The simplest perhaps is actual costs (in money, time, or trouble). In case study (1) we asked “what is ‘a deposit?’” One way to establish that two deposits are different is *measuring* various attributes (e.g., note the Munsell-color and average grain-size). This is an altogether more complicated business than saying “these two deposits are different”. Is it worth it? This depends on your objective. If one of the aims of your excavation is to study diagenetic processes in the soil, then certainly one should measure the properties of the deposits (though I might suggest that a more explicit research design and a battery of tests other than Munsell colors and eyeballing particle size might be in order). If you measured two attributes merely to affirm that a compact reddish material is different from loose gray stuff, you have probably been wasting your time and your sponsors’ money.

A more insidious danger is looking for lost coins under the street-lamp. Since so many of the attributes held to be significant by stratigraphers are subjective to a certain degree, why don’t we limit ourselves to those which are truly objective? David Warburton is compelled to find merit in the excavation methods at Byblos, which recorded nothing *except* the arbitrary spatial ‘spits’ in which things were found. He notes (Warburton 1998) that such methods are “remarkably objective”. One would have to agree that spatial locations are one of the few things stratigraphers may measure unambiguously. Later, he pronounces that it “proved virtually impossible for anyone to master the stratigraphy of Byblos” and that the method is “counterproductive”. If the price of ‘remarkable objectivity’ is total incomprehensibility, then it is surely excessive.

The same is true for the law-abiding (and law-seeking) nature of the enterprise. The reason that archaeologists, whenever they can, add cognitive considerations to the laws of geological stratification is *because they are valuable explanatory tools*. Surely there are a myriad of depositional scenarios by which the order of deposition of Jericho trench I *might* be explained, but under which the ‘story of Jericho’ would not make sense (case study 3). To locate the ones that do, is it wrong to make assumptions that the people of Jericho, like people everywhere, built their site to cater for basic human impulses—among them protection and ostentation—and to limit our search to solutions satisfying these assumptions?

Blessed are the objective, for theirs is the kingdom of Truth?

Price is of little consequence to devout positivists. If there is only one positive way to ascertain the truth or falsity of any statement, and everyone else is forever doomed to the purgatory of no 'cognitive meaning' (Kelley and Hanen 1988: 209)—then clearly any price is worth reaching the blessed state of positive knowledge.

By trying to 'objectivise' the inherently ambiguous, by stamping out doubt and branding vacillation as weakness, we are subverting our discipline. While fostering *the appearance* of objectivity in the way we excavate, report the results of our excavations, and write textbooks to instruct the next generation, we open the back door for bad scientific practice *however* science is defined.

Who among us has never cut through a floor? Has not missed pits only to locate them *after* they have hopelessly contaminated deposits? Has not mis-labeled or simply forgotten to label finds?—Why are such mishaps rarely referred to in our excavation reports? Why is it that we never agree in the field, but our excavation reports always speak in one voice?

The quest for total objectivity in observation nurtures the "King's new clothes" syndrome. We foster the fiction that soil distinctions or relations between elements are obvious and unambiguous in our textbook and our classrooms. When our students find themselves in the blurred and confusing reality of the field, it seems as if they are not seeing things which are perfectly visible to their professors. In effect we encourage them to fudge—to confidently declare that which they are not at all sure about.

Needless to say, this is a self-perpetuating myth. The more volubly everyone agrees that the king is magnificently clothed, the more pressure there is on each individual to squelch their own misgivings. The price we all pay for over-objectivising is that we lose important analytical tools. When confronted with a clearly contradictory situation, as in the 'circular stratigraphy' example in case (2) above, we cannot tell which of the observations making up the vicious circle were perfectly clear to all of the excavators, and which are based on a smudged line that someone thought or imagined they saw when the balk was wet and the sun was just so. When we wish to try-out a scenario *different* than the one the excavators decide on (case 4) we find, more often than not, that the evidence which might help us make any case but the one favored by the excavators was simply not recorded.

Subjectivity (la mode?)

Finally, before committing ourselves to a positivist posture we might ask ourselves if such a stance promotes our general theoretical commitments. Admittedly, the very posing of that question (and perhaps even questioning the price of 'being scientific') puts us out of the bounds of positivistic science. If one accepts that anything which was not objectively observed has no cognitive meaning, then anything less than strict adherence to scientific procedure is not an option. If, however, we reject the doctrine that only pure science holds a privileged position in the quest for wisdom, then we might try *different* methodologies on for size.

Positivism entered archaeology in the 1960's–70's, when the discipline was seeking *firmness* and acceptance within the social sciences. Since then, however, other trends have come to the fore. Instead of 'solidifying' humanistic enterprises into social or even natural sciences, post-modernism has tended to 'soften' the study of humanity in its various forms. 'Post processualist' archaeology has followed suit, stressing that texts or contexts mean different things to different people, and that there is *no* single privileged view of the past. Under such a theoretical outlook the 'shameful secret' that stratigraphy is less than totally objective and

its results can be equivocal need not be concealed, nor need we spend all our time trying to introduce extra rigor into our excavation technique.

I have no intention to preach here in favor of post processualism. The field is as divided on this issue as it ever was. My point is that one's convictions should be followed through in one's analytic apparatus. If you believe human culture and history can be explained unequivocally by a rigid set of laws and procedures, or that archaeology can uncover what *really* 'happened in history' if only we adhere to proper scientific procedure, then by all means that belief should be extended to a search for 'laws of archaeological stratification'. If, on the other hand, you believe that archaeology (and history) are about constructing multifaceted ways in which people might view the past, then you had better adopt a stratigraphic theory which embraces multiplicity of explanation rather than disavow it.

A little relativism can go a long way

Does rejecting deterministic absolutism in stratigraphy (or archaeology in general) mean that anything goes? Does it mean we cannot criticize anyone else's excavation or analytic technique? That science and voodoo have the same legitimacy? This is a favorite bogeyman technique that positivists use to coerce would-be skeptics into believing that even a whiff of relativism can defile the tabernacle of Science. In fact, admitting to all shades of gray between white and black need do nothing of the kind.

So what, if any, are the practical implications of an 'indeterminative' stratigraphy?

1. Let's loosen up, and lose a bit of that scientific pomposity in the way we excavate and talk about excavation. We are human beings carrying out an essentially humanistic endeavor—we err, we are aided and burdened by preconception, we see some things clearly, some things vaguely, and some things not at all.
2. Doubts, arguments, and conflicting points of view should be encouraged rather than suppressed, and should find their way into the way we report our excavations.
3. The role of the stratigrapher is to *outline options* to the rest of the publication team, not to *dictate* an interpretation. The stratigraphic scheme should present *possible scenarios* as to what the site *might* have looked like at each phase of its existence, as well as the temporal order and the value (or 'cleanliness') of the assemblages of artifacts from these phases in each scenario. It should indicate the constraints that stratigraphic relations impose upon possible permutations, but stress slack points, or points of articulation in the stratigraphic structure, where other permutations might be tried out.
4. Stratigraphic schemes should not be rated as 'true-or-false', but evaluated on a 'likely—possible—unlikely—highly improbable' scale. Some of the scenarios proposed by the stratigrapher might be ruled out (or change their 'likelihood' rating) on artifactual or other considerations—but it is in no way necessary that only a single scheme (or even any scheme at all) prove flawless.
5. Denying the 'Sherlock Holmes' tenet that there exists a unique path connecting any set of observations to a single 'correct' interpretation—and that any competent practitioner must be able to deduce that correct explanation given all the data; means that we must now, *in addition* to presenting the data and the interpretation, also explicitly define the assumptions and premises used in conjunction with

the data to build the interpretation, and to spell out *how* the interpretation was built.

An ambiguous conclusion

The argument herein has been hierarchal, and, in true post-modernist fashion, counter-deductive. I contend that:

- a. Positivism has failed to provide an adequate description of *any* science. There is no reason for archaeologists to adopt a methodology that even Physicists reject as too clinical.
- b. Whatever its validity in the 'hard' sciences, the positivistic prescription of stratigraphic reasoning *does not* describe how stratigraphers, even the best of them, go about their craft. Using only objectively measured data and the natural laws of 'continuum mechanics and atomic theory' *is not enough* to intelligibly explain the stratification of a complex site.
- c. Granted that a totally objective, logical, positivistic stratigraphy *could* be formulated, *It would not necessarily be worth the price.*
- d. There is no reason to pay the inherent prices for a purist, clinical stratigraphy, *if it does not fit* our conceptions of the nature of material culture and of the historical process.

Note, of course, that were I a logical positivist I could rest my case at any of these levels since each one includes the following.

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Adobe in the Jordan Rift Valley

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Abstract

In a recent interdisciplinary study of adobe in the Jordan Rift Valley, archaeology, pedology, botany and ethnography were integrated. It drew on engineering, architectural and socioeconomic analyses in order to compare the ancient technology of adobe-making to the surviving one. The main objectives were to trace adobe use through the ages, to quantify variation and attempt to explain the differences.

In situ adobe structures from recently exposed and on-going archaeological excavations were recorded in detail and sampled. A selection of samples were then tested by mechanical, mineralogical, organic and chemical methods. Finally, ethnographic records were made in the Jordan Rift Valley and compared to more limited investigations made in Turkey, Syria and Oman.

Introduction

The oldest use of sun-dried brick, or adobe, is found in the Jordan Rift Valley where the combination of semiarid climate and abundant alluvial soils make it the most convenient choice of building material. The practice of making adobe structures and seasonally reconditioning them can be traced for 10,000 years in the archaeological record. Such evidence demonstrates the success of earth as a building material. It is also closely linked to the beginnings of agriculture and urbanisation.

The preference for the word “adobe” rather than “mud-brick” comes from the word’s origin and because “mud” is an imprecise term. Adobe is a Spanish word transliterated from the Arabic at-tub during the Moorish rule of the Iberian Peninsula. This had its origins in the Coptic word twbe (tobe) which in turn derives from the Egyptian word for brick “dbt” (Gardiner 1969: 497.37) (Fig. 1). All these refer to the sun-dried brick used as a building block comprised primarily of common earth and usually mixed with some kind of tempering agent such as straw. By extension it can also be used to describe an entire structure built of this material.

The area in which this research was conducted was restricted to the Jordan Rift Valley, bounded by Lake Tiberius and the Yarmuk River Valley to the north, and the Dead Sea to the south (Politis 1988, 1993, 1995 and 1999) (Fig. 2). The majority of the sites that were investigated lie on the two levels of the valley floor, the upper ghor and the lower zhor. These tell sites were formed by consecutive layers of abandoned or destroyed adobe-built structures and are the best physical testimony for the importance and long-use of adobes as a basic building material in settlements of the Jordan Rift Valley.

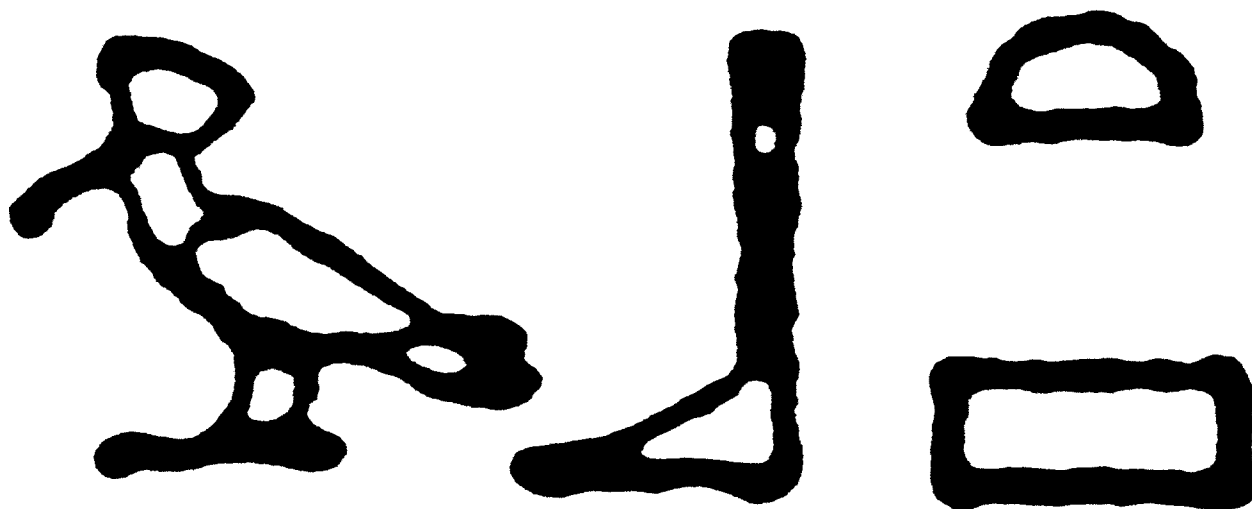


FIGURE 1. Egyptian hieroglyph *dbt*, for adobe brick (from Gardiner 1969: 497.37).

Methodology

Samples of 310 adobe bricks were taken from a wide variety of ancient walls from various sites in the Jordan Rift Valley in order to investigate whether there was any notable variation. These included walls ranging in date from the Neolithic to Islamic periods. In addition twentieth century bricks were also sampled.

Natural soil and sediment samples were taken from the immediate vicinity of seven sites in the Valley in order to determine the soil sources for brick-making.

Ideally, each wall investigated had more than one brick sampled to distinguish whether there were differences between individual bricks or if they belonged to the same batch. The bricks sampled included at least one brick that was typical of most bricks present in the wall, along with a few of the more unusual bricks, if any were present. The decision whether a brick was “typical” or “unusual” was based principally on the colour, textures and dimensions of the bricks. These three forms were created specifically for this study but could also be used in future researches as well. Where the variation between bricks in a wall seemed to be more marked, a greater number of bricks were sampled. In addition, a consolidated sample of one brick in each wall was taken when possible so that the soil variation between the centre and the edge of a single brick could be investigated and so that tests relating to their strength and durability could be carried out.

To investigate whether there was any notable variation in the bricks of different buildings of the same archaeological period or of one type of building over time, walls of various periods and structures were sampled. This was because to investigate the development of brick technology through time, it was necessary to eliminate differences due to varying types of building. House walls were by far the most frequently exposed type of wall.

To investigate whether there was any notable variation in the sources of soil or sediment used for brick-making, off-site samples were taken. Unfortunately there was no time or equipment to make a proper soil map of the immediate vicinity or a full study of the local alluvial history. Instead, choices were made in the field as to which would be the nearest possible sources. In addition brick samples were taken from modern walls in the villages to see how they differed from the off-site samples and from the ancient bricks.

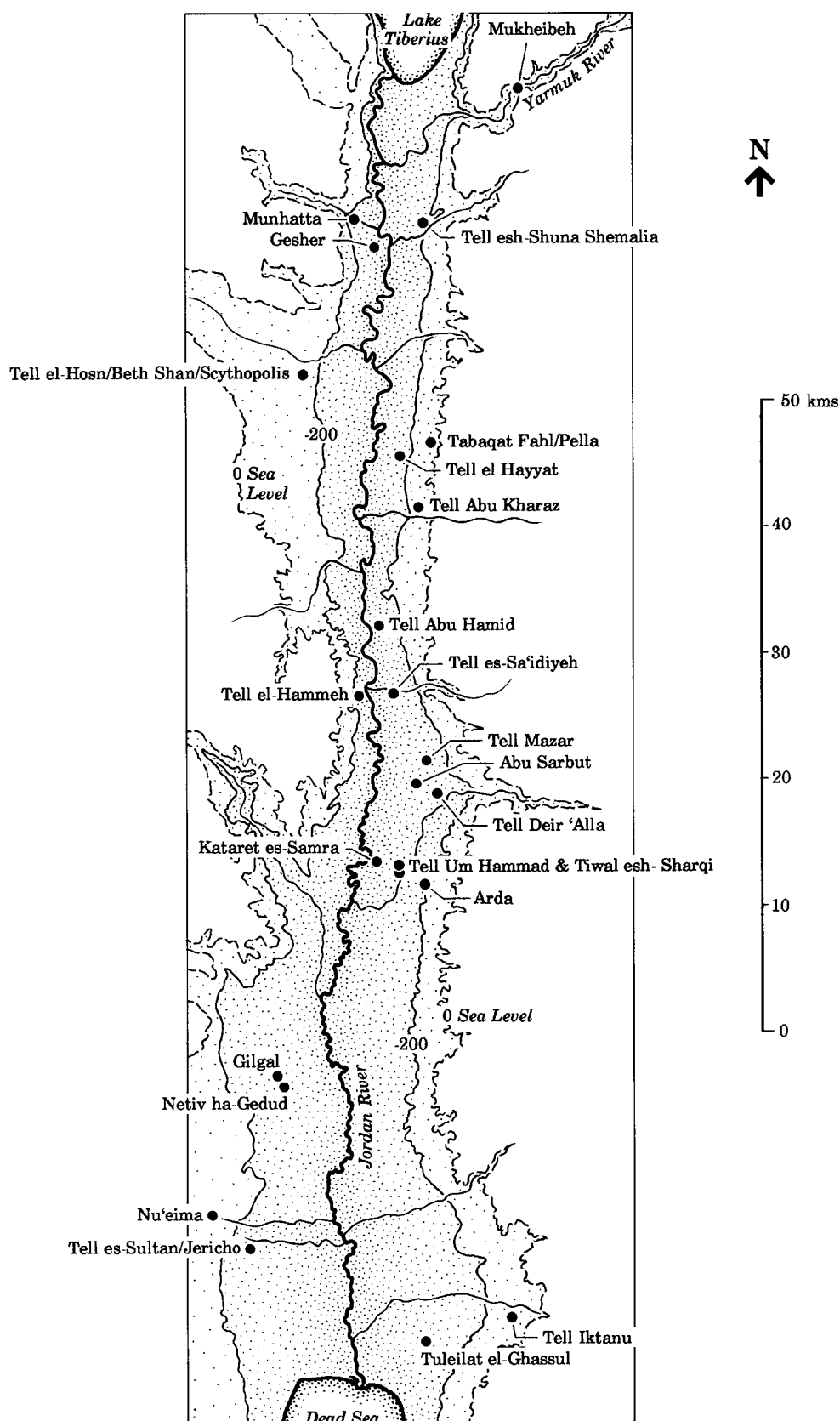


FIGURE 2. Sites referred to in the Jordan Rift Valley with adobe structures (map by J. M. Farrant).

Each sample taken was of about 200 grams in weight and was taken after scraping off any sediment deposited on the surface by wind or rain. All the on-site samples were taken from complete, *in situ*, bricks of walls that had been exposed by excavation. Precautions were taken to try to make the samples as representative as possible with, for example, unconsolidated samples usually including both the centre and edges of bricks.

The following is the list of the 310 adobe samples which were taken by K. Politis.

1. Tuleilat Ghassul: Area A-3
- 2–27. Tell Iktanu: 600.41, 600.49, 600.47 and 600.39
- 28–102. Tell es-Sa'idiyeh: AA 240.2 (bin), AA 339.1, AA 421.1 (bin), AA 100 (walls e and g), AA 400 (walls e and h), DD 500 (wall a), BB 661.2 (wall c), BB 400 (walls b, d and e), AA 300 (walls m and n), DD 400 (wall a), BB 100 (T. 171), AA 421.1, DD 300 (wall f)
- 103–105. Tawahin es-Sukkar: internal wall
- 106–108. Tell es-Sa'idiyeh: AA (wall i), BB 100 (T. 171)
- 109–110. Bilad Bani Bu Hassan, Oman: 19th century A.D. Sawaya family house
- 111–144. Tell es-Sa'idiyeh: BB 100 (T. 171), BB 200 (paving wall), DD 405.3, AA 300 (wall l), EE 601.1 (wall f), BB 400 (wall a), EE 602.1 (wall e)
- 145–152. Katarat es-Samra: MBII/LBI tell wall
- 153–155. Tell es-Sa'idiyeh: EE (staircase)
- 156–160. Deir Alla: B4–95, B5–151(threshold)
161. Souelha: ca. 1950's house
- 162–206. Deir Alla: BD7–73, BB5–22, BB3–33, BB10–52, BC10–61, BA7–35, BC10–12, BC8–72, BD10–14, BC7–103, BB4–98, BB8–63, BD7–48, BB5–145, BA7–55, BD7–69
- 207–208. Buseirah: AVII 2–2a
- 209–210. Khirbet Iskandar
- 211–243. Tabaqat Fahl/Pella: IIIC (walls 27 and 41), IIIF (wall 1), XXXIIC 4.1, XXVB, IIID (wall 4), IIIP, XXXIIA (wall 4), XXIIIA 81.1, 83.4, 71 and 74.2
- 244–247. Tell Abu Hamid: AO+AN 257
- 248–266. Tell Umm Hammad: walls BP, BB, BJ, BE, BO/BF
- 267–270. Tell el-Mazar: Persian wall
- 271–275. Tabaqat Fahl/Pella: XXXIVC 2.3, XXXIVA 2.5
- 276–283. Tell Umm Hammad: 3200
284. Tell es-Sultan/Jericho: Neolithic “hogback” brick
- 285–287. Tell Iktanu: 601.19 and 601.33
- 288–289. Tabaqat Fahl/Pella: XXIX P/Q 1.5, XXXIV
- 290–291. Tell Iktanu: 409.5 and 600.18
292. Tell es-Sa'idiyeh: BB 200 (wall F)
- 293–296. Tabaqat Fahl/Pella: XXI Q 2.3, XXXIV G 4.2, XXXIV E 2.1, XXXIV A 7.3

297–301. Tell es-Sa'idiyeh: Area AA

302. Tabaqat Fahl/Pella: IIIC 53.21

303. Tell Hammam: H 80 wall 31

304. Tell es-Sultan/ Jericho: western city wall

DAA K I 13 d, DAA K I a and b. Deir 'Ain 'Abata: floor slabs in monastery

Results of Particle Size Analysis

It was originally intended to conduct particle size analysis on all 310 samples which were taken as well as the natural soil/sediment samples from around the ancient sites. Although 96 particle size analysis tests were conducted by K. D. Politis at laboratories in Greece (52 samples), Jordan (25 samples) and England (19 samples), time and space hindered the completion of all the samples. However, the results were sufficient to achieve the objective of demonstrating what could be done by such experimentation (Politis 1999).

Some samples were subjected to more than one test at the four different laboratories in order to cross-check the results. The differences were negligible and therefore did not affect the final results.

In general, the soil content of the adobe bricks reflected the natural soils around the individual sites. They both tended to have high silt content (usually around 90%) the rest being mostly clay and the least component was sand. It could therefore be concluded that the ancient brick-makers did not go far to acquire their soil sources. But considering that there usually was at least three types of soils around the sites, with differing characteristics, it was evident that there was a conscious choice of soils for brick-making and therefore, there was clearly an awareness regarding their different attributes.

Compression Strength

Although many of the original physical properties of the ancient adobe bricks have long since been lost due to soil decay and temper disintegration, it was still deemed worthwhile to conduct a maximum (ultimate) compression strength test on a limited number of complete bricks (Politis 1999).

Mineralogy

The determination of mineral content within the clays, silts and sands can help in the identification of soil sources. This in turn can corroborate the choice of specific soils from those available. One of the most common methods of mineral analysis is by X-ray diffraction. Although more sophisticated scientific instruments are needed for such a test, it is regularly used in investigating soils. The cost of this procedure prohibited the undertaking of such examinations in this study, though published ones have been cited (Politis 1999).

Soil Structure

Soil structure here deals with the shape, size and degree of development of the aggregation of particles. Five main types of soil structure have been distinguished according to their shape. These are further described according to size and degree of development (Courty et al. 1989: 38).

Soil structure analysis is one of the simplest and least expensive methods of determining the origins of soils and how far they have been transported. Along with chemical analysis they can help identify sources of earth used in adobe brick-making.

Conclusions of Analyses

In spite of the more limited number of tests conducted on the samples a general picture of the soils could to be distinguished.

Those samples which were taken from northern sites of the Jordan River Valley and its associated wadi systems, such as 260–262, Beth Shan, 249, Z-3, Z-4, Z-5, DAA K I 13 d, DAA K I a and b, had a higher percentage of sand (over 5%). This would reflect the slower movement of larger, and consequently heavier soil particles moving down the valley. The reverse was also apparent for samples (under 5% of sand) TAH-1, TAH-2, Z-1, Z-2, DA 1, TUH-1, TUH-2, 252, 280 and 266/265 taken from the south.

Most of the samples contained a similarly low clay percentage ranging from 2–3%, with only a few exceptions above 5% (TAH-1, TUH-2 and 280). This can be explained by the fact that the water outflow in both the Jordan river and its many wadis is largely determined by flash floods which tend to carry the smaller and consequently lighter soil particles into the Dead Sea. This phenomena is compounded by the intermediary arid conditions which persist in the Jordan Valley depression as a whole. The torrential rains of this area tend to wash away much of the lighter soils more quickly than would be experienced if the precipitation was more moderate.

Almost all the samples were comprised of 90 percent or more silt (the exceptions being Z-4 at 88.3% and DAA K I b at 83%) which clearly characterise the Jordan Valley soils. Interestingly, silty soils also make the best adobe bricks. Whether this was always a conscious choice cannot be determined for certain, but the result is a better product being made than from other areas which have a greater percentage of sand or clay. Too much clay tends to crack adobe bricks and too much sand makes them heavy and less binding.

Although colour determinations according to the Munsell Colour Chart may not always be the best indicator for provenance and soil characteristics, it often can be used to distinguish soil types. Most of our samples were usually classed in the shades of light browns and yellows. This would not only reflect the geological mixture of various sands and silts washing into the Jordan Valley but also their contamination with man-made deposits (such as ash and middens; ie 152 and 292). The lighter, yellow and almost-white coloured soils represent the purer Lisan sediments (145, 148, 149, 150, 284, 294, 295, 296 and 251). The rarer reddish-coloured samples clearly are the older Qattar soils which proceeded the Jordan Rift Valley formation (304).

Straw Used as a Tempering Agent

When straw, chaff or other vegetal material is used as a tempering agent in adobe the evidence of their use can often be traced. In Egypt where conditions are particularly dry and in some more recent medieval sites the actual straw and grain has survived. Occasionally the silica skeletons have survived. But more often the only evidence of inclusions available are through impressions. These can be identified and even quantified in order to determine the types of temper preferred and the amount of this which went in to the adobe mixture.

For this research a simple visual method was used to determine relative abundance of vegetal inclusions per volume on a five point scale (i.e., 1= 9%, 2= 20%, 3= 21–40%, 4= 41–



FIGURE 3. Barley impression from Hellenistic adobe brick, Pella (photo by K. D. Politis).

50%, 5= above 50%). In conjunction with this a botanist was employed to identify the different species of plants (i.e., barley, wheat, etc.) which has given additional information about preferences of temper.

Although such methods are new, they are an integral part of understanding adobe technology. They also serve to illustrate the fact that agriculture and adobe architecture are closely linked.

In an adobe building around 800 A.D. at the Nahrwan Canal in Mesopotamia the imprints of two-row barley were identified (Helbaek 1971: 213). In a Hellenistic house at Tabaqat Fahl/Pella another barley imprint was also identified and recorded (Fig. 3).

Summary of Modern Adobe Brick-Makers' Interviews

Before the 1930's the Jordan valley was occupied primarily by Bedouin tribesmen who were dependent on livestock rather than farming. Their lifestyles were dominated by seasonal transhumance up and down the valley. Therefore the most common form of dwelling was the goat or camel hair tent (beit Sha'ar) and reed huts. Adobe technology was introduced into the Jordan valley from the west by two different circumstances. First, with the construction of the Potash Company in the south which instigated the establishment of agricultural farms. And second, in 1948 when Palestinian refugees came across the Jordan



FIGURE 4. Domed roof adobe house of Hussein Shahab in Souelha-Deir 'Alla (photo by K. D. Politis).

river bringing with them sedentary traditions. In both cases building with soil was quick, cheap and linked to customs of settled farming communities. In the 1950's and 60's the Jordanian government officially promoted adobe-buildings and even established specifications for them. The introduction of domed roofs was influenced by the employment of Syrian brick-makers although this was limited to specific government contracts (Fig. 4).

Most of the people involved in adobe brick-making were not specialists but ordinary farmers and peasants. Very often an entire family was involved in building their own house, a simple one roomed structure. Consequently standards varied. There were though, a couple of instances where a specialist brick-maker in the community was employed to build the village mosque. Wealthy land-owners also employed specialists to build larger two-storey farm houses. In one circumstance an established adobe brick-maker went on to make bricks out of cement when the new material was introduced and promoted by the government.

Although there were some practical differences amongst the adobe brick-makers, their methodology was basically the same. This variation may be accounted for by their degree of formal training, or by their personal preferences and availability of materials.

The choice of soils were largely dependent on what was nearby; distant transportation was simply not feasible. Adobe brick-makers were conscious of the three basic soil types: white marly clay, red soil and a browner version. Although some only preferred red and brown soils for bricks, all recognised white marls as being more suitable for plastering walls. In any case, a general feature of the Jordan valley which they all seemed to acknowledge, was that all of its soils were more or less suitable for brick-making. And indeed this is the reason why soil has been the preferred building material in the valley over the centuries.

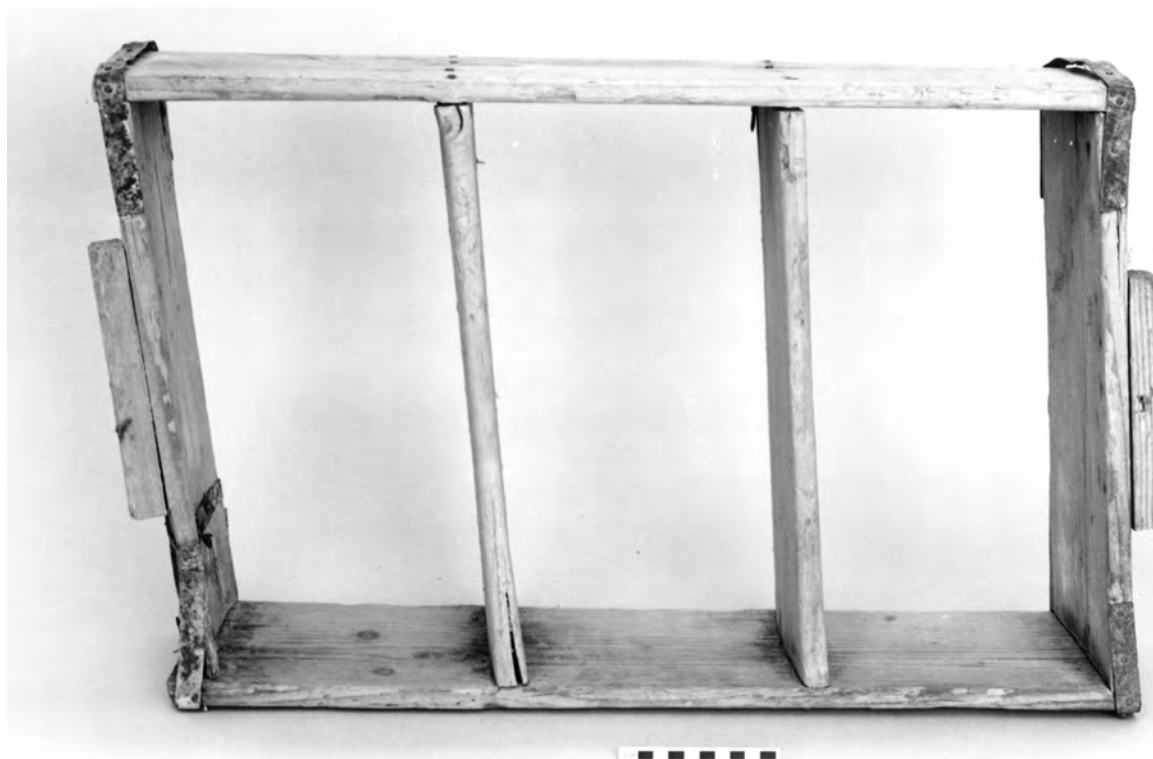


FIGURE 5. Galeb, adobe mould, from near Tell Abu Sarbut, Deir Alla (photo by K. D. Politis).

The manufacturing process of adobe bricks did vary from maker to maker but this was due mostly to individual habits rather than specific reasons. All used rectangular moulds; most made of wood though some of metal, both in single and multiple units (Fig. 5). The brick dimensions varied somewhat: from 45–14 x 40–20 x 7–20 cms. The larger sizes were limited by what was practical to carry with out breaking the bricks. Smaller bricks were moulded, though they may have been cut from larger ones. Only the bricks needed for domes differed from this rectangular shape. Unusual trapezoidal-shaped bricks were documented at Bozan in modern Turkey similar to those unearthed in Early Bronze Age levels at Tell Ik-tanu.

During the pugging process all the brick-makers interviewed said that they added straw (kaswal) as a tempering agent (ratio: 1 straw to 3 soil) and they preferred wheat to barley. The former is also valuable as animal fodder and so may not always be available for building purposes. Bricks are also made without straw at all, no other ingredients being added.

After the mixing was completed some brick-makers allowed a few days (at least overnight) for the straw to decompose before forming the bricks in the moulds. Drying could take several weeks and was always done in the summer months when it is warm and after the harvest when straw is readily available.

A uniform batch of bricks were employed to make an entire adobe structure. The more expensive tibn na'am straw was employed for wall plaster. The roof was made of much coarser material. The cost to make 1,000 adobe bricks in the 1950's and 60's was no more than 20–25 Jordanian Dinars (around \$US 70).

The economy of adobe brick making is labour intensive making it very expensive by today's standards in spite of high unemployment in Jordan and other countries in the Levant. Jordanian government regulations which prohibit modern electrical installations in adobe

structures, for example, further discourage this type of building. The result of such conditions have been the end of adobe brick building in the Jordan Valley. The last known adobe house was built in the 1970s at Tabaqat Fahl.

Because adobe-built houses are cooler in hot weather than one made of concrete, the people of the Jordan Valley choose to sleep either on the roofs of their cement houses or in traditional *beit Sha'ar* tents. This is a clear example of a change of social habits as a result of a new building material. On the contrary, in Turkey where government policy has actively encouraged adobe-built structures, more traditional social habits have persisted.

The Development of Adobe Technology and Architecture as an Indicator for Urbanisation

Architectural forms develop as people learn to master more complex building techniques and all forms are part of a progressive development in a series of almost inevitable steps. The cave, with no building, gives way to the windbreak-shelter, the circular hut, and finally the rectangular house in its various forms which are, in turn, derived from the various materials and techniques employed (Rapoport 1969: 24).

It has been visualised that when people lived in caves and rock shelters, they learned to pile-up stones into a screen to narrow the entrance and to divide the space (Woolley 1955: 154–155). When their life-style changed, due to the agricultural revolution, the cave dwelling may well have become too inconvenient because it was too far from their cultivated land. As they moved down to the plain, their experience in heaping-up stones came in useful; where there was no cave-shelter they knew how to build one. But the old cave had surrounded and protected them and that was what they wanted to reproduce. It was the inside of their home that interested them, for there had never been an outside. A logical way to recreate such a shelter would be to stand in its centre and arrange the stones all around you. This may be how the first circular stone dwellings were built. To secure such a structure, a mixture of earth and water could easily be made for mortar and plastering. If sufficiently large stones were not available, roughly-made balls of the soil mixture could be used instead. This is precisely what is found in the earliest prehistoric settlements at Tell es-Sultan/Jericho, Gilgal and Netiv Hagdud.

The new socioeconomic system brought about by the development of agriculture resulted in a more sedentary way of life (Bar-Yosef and Belfer-Cohen 1989a: 60). The process of “abandoning mobility” was deepened in the early Neolithic times with an increasing effort being made in the building of dwellings, storage facilities and the cultivation of fields (Bar-Yosef and Belfer-Cohen 1989b: 490). As hunters became herders, and gatherers became farmers, they became more familiar with the potential of working with the soil. Learning to build with this readily available material was inevitable and only a matter of time.

The knowledge of working the soil and basic irrigation led to a consciousness about earth as an exploitable and workable building material. Coupled with the necessity of more permanent dwellings the use of earth was the most obvious choice of building material.

Communities enlarged in response to population growth during the Chalcolithic and Early Bronze Age. This proto-urban period was characterised by nucleated settlements enclosed by defensive walls. The idea that they developed around large public buildings/structures in Palestine/Jordan was directly connected with the notion of a collective effort of construction (Kempinski 1978: 32). Meanwhile, stones or hand-made lumps of earth used to make round or apsidal buildings during the Neolithic and Chalcolithic periods,

gave way to mould-made rectangular or square bricks. This necessitated the design of buildings, rectangular or square, using right-angled corners. The entire shape of the buildings consequently had to be rectangular or square. These forms are clearly more space-efficient for nucleated and fortified settlements than oval or round structures. Furthermore, the social significance of the change from curvilinear to rectilinear buildings might represent the shift from habitations designed for single to extended families (Flannery 1972: 23–53).

The development of settled agricultural communities are directly related to the innovation of adobe as a basic building material for more permanent dwellings. A modern parallel can be made to the hypothesis that the advent of agriculture was closely connected to adobe brick-making. In the 1930s when the Palestine Potash Company was set up in the southern Jordan Rift Valley, its employees created a demand for fresh vegetables. As a new agricultural regime grew in the valley to supply them, the traditionally pastoral, nomadic peoples of the Jordan Valley needed to turn to a more settled life-style. As a consequence of this new sedentism, adobe houses replaced tents and reed huts. This was also repeated more recently when adobe buildings consistently increased as agriculture intensified in the Jordan Valley (Dept. of Statistics of Jordan 1961: 111; 1973: 141; 1984: 6).

Although there is archaeological evidence of specialised adobe house-builders from 5,000 B.C. (Shahmirzadi 1979: 183–192) the general practice was probably for relatively unskilled family or community collaboration (Talib 1984: 98–99). Consequently, there was a significant amount of qualitative variability.

However, the construction of public buildings such as temples and fortifications, made it imperative that there should be some uniformity. It became essential that mould-made adobe bricks had to be a standard size and quality. The influences for these developments originated in Mesopotamia (Wright 1985: 351) and a little later from the Nile River Delta (Woolley 1955: 159–160).

The larger adobe constructions became the more organised labour needed to be. To some extent a communal effort could be expected such as in order to build a defensive wall (Bar-Yosef and Belfer-Cohen 1989b: 479–80). But for the building of large public buildings, such as palaces or temples, coercion sometimes had to be used. The most obvious examples of such a circumstance were the huge Egyptian building projects. The story of Gilgamesh's difficulty to construct the Uruk city wall was similar. Another example of forced labour is at the end of the Late Uruk period, when an enormous terrace was constructed in the west of the holy district of Eanna in Mesopotamia. It has been calculated to have taken the labours of 1,500 workers ten hours a day for five years to complete (Nissen 1988: 95).

The successful use of adobe for both domestic and public architecture is well attested for over 10,000 years in the Near East as in other parts of the ancient world. The fact that similar adobe architecture remains in use today proves that a relatively primitive technology is not necessarily obsolete with the advent of new materials or more complex structures. Just as the simple adobe house existed together with monumental stone-built pyramids in Egypt and ziggurats in Mesopotamia, so can they today.

Dwelling Form

To decide what form a family-based dwelling should take is made on socioeconomic variables: the previous way of life, shared group values and a notion of the ideal environment desired. But once it has been decided whether the building is to be an individual or commu-

nal home, permanent or portable, a self-sufficient establishment or to be part of a larger settlement; once the site has been chosen, and the design has taken into account climactic forces, there still remains certain universal problems; those relating to construction (Rapoport 1969: 104).

To enclose a space, the availability and choice of materials and construction techniques will greatly influence and modify the final form of the building. Just as a house responds to the physical stresses of climate (heat, cold, humidity and light) it must also respond structurally to the mechanical stresses (gravity, wind, rain and snow).

The fact that circular huts are easier to roof than rectangular buildings is acknowledged, but such are the advantages of the latter that the extra skill and effort was considered worthwhile. This change of form may, in fact, be related to a symbolic use of the two forms (Rapoport 1969: 25). On the plains of northwest Syria conical 'beehive' shaped dwellings are the norm, and flat-roofed structures (when they can be afforded) only serve as a guest house; such a construction carries greater prestige due to its expense as the roof-beams have to be imported (Horne 1982: 42).

The choice of earth to make adobe bricks was both a conscious and economic decision. It is an ideal building material because of its availability and physical properties. Furthermore, the form of adobe architecture is particularly suited to agrarian societies.

Climate and Shelter

Climatic determinism has been widely accepted in the study of architecture as well as in cultural geography. One can not question the influence the climate has on the determination of a building form. However, examination of the extreme differences in urban pattern and house types within a given area shows them to be more greatly related to culture than to climate, making any extreme determinist view rather doubtful according to Rapoport.

In the view of architecture, the climatic determinist view states that primitive man is concerned primarily with shelter, and consequently the imperatives of climate determine form. Houses are built to keep in a consistent climate, and to keep out predators (Rapoport 1969: 19). Shelter is the major consideration in man's struggle for survival. The type of building is dependent on, and usually reflects, local climatic conditions.

Builders under difficult conditions show a detailed knowledge of the forms, materials and micro-climate of an area. They know the absorbent, reflective and other characteristics of local materials for maximum comfort and their resistance to weather. Builders also work on economy of scarcity, their resources of materials, energy and technology are very limited, and the margin for error and waste correspondingly small. These apply particularly to the Jordan Valley with its limited natural resources and persistently arid climate.

Conclusions

This study of the manufacture and use of adobes in the Jordan Rift Valley should be seen as initial research on a subject which needs to be continued in all future archaeological work where there are such structures. It has highlighted the importance of a multi-disciplinary approach to archaeology in the field. Of particular significance is the use of detail and scientific analyses of every form of archaeological evidence, down to the very grains of sand and their origin. The use of ethnographic models, if employed prudently, can yield a valuable

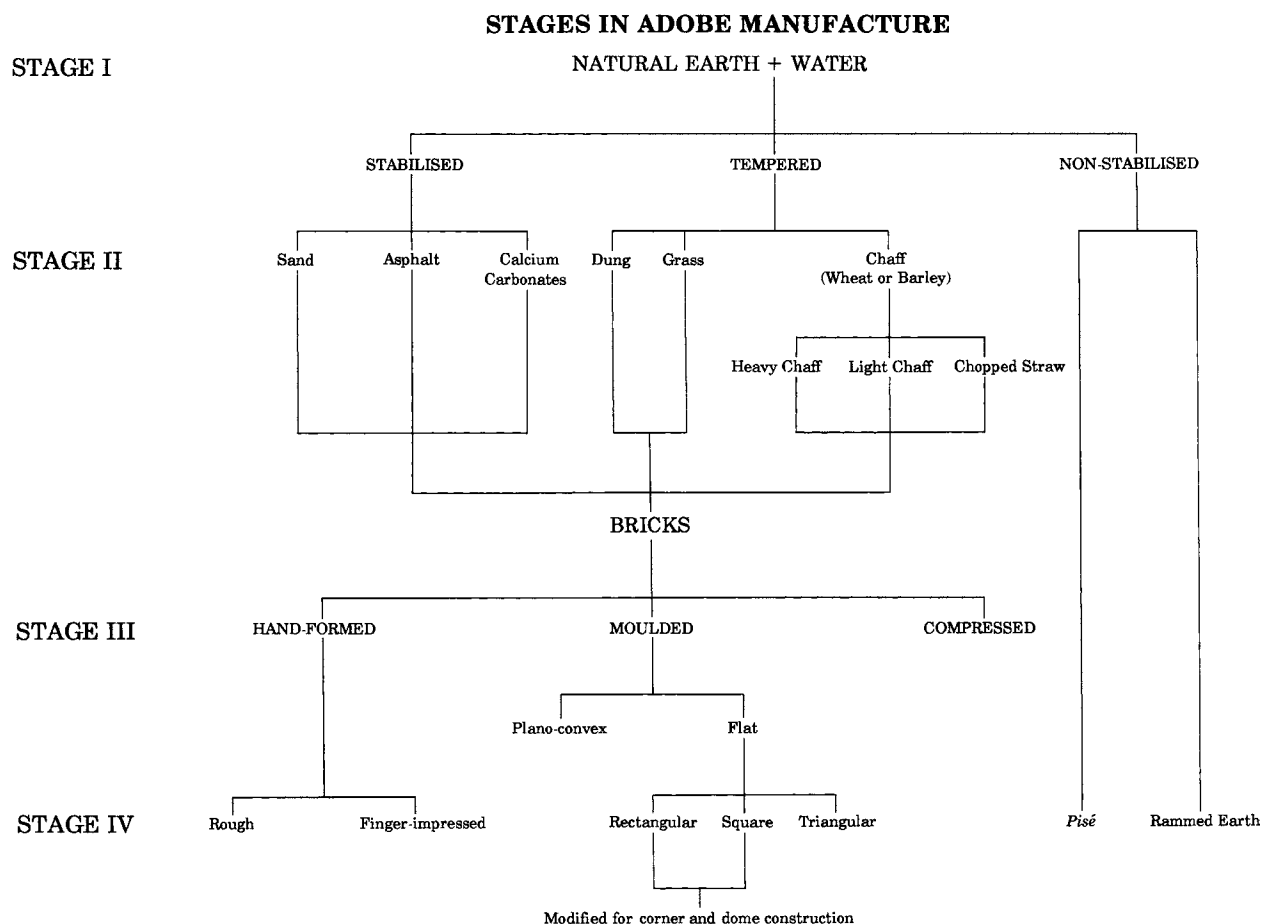


FIGURE 6. Stages in adobe manufacture (flow-chart by J.M. Farrant after K. D. Politis).

source of comparable information. One result has been the identification of four stages in adobe manufacturing (Fig. 6).

Probably the most interesting period for the study of adobe in the Jordan Rift Valley is during the Early Bronze Age I (3,300–2,000 B.C.) when major urban centres were being established with large scale buildings and walls. It was during this period that adobe technology was actually developed and perfected. Unbaked adobe bricks were widely employed throughout the rest of the Bronze Age periods as well as during the Iron Ages. It wasn't until the Hellenistic, Roman and Byzantine periods when stone masonry became dominant for public building. This can be interpreted as a foreign architectural influence. However, the use of adobes never really disappeared especially for domestic structures. There was a marked return to adobe architecture in the Medieval/Islamic periods indicating it was the perennial traditional building material in the Jordan Rift Valley.

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Architecture as Source of Chronological Information¹

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Abstract

Compared to other archaeological elements (ceramic, small finds à), architecture is still superficially considered and used as chronological indicator. This could be explained not only by the fact that generally constructions are destroyed in their bigger part, but also by the difficulty to carry out a thorough architectural study as we will see. Nevertheless, the increasing interest of archaeologists in architecture, particularly in this very beginning of the 3rd millennium, is noticeable. This is partly due to architectural documentation reliability being enhanced by modern technologies. With this quick spread of means, it becomes urgent to specify the ways and the reasons of how cautiously architecture should be studied, especially in dating perspective. A full study should include: first, the volume, second, the materials and techniques of construction. Most of architectural comparative studies consider only the first aspect in its partial state, which is the plan. Yet, as exposed examples show (Qatna, Alalakh, Ebla, Ugarit, Emar . . .), an approach that takes into consideration techniques of construction does not only help three dimensional reconstitution, but in circumstances that will be specified, techniques can represent important chronological signs.

Introduction

Architecture is commonly considered an unreliable chronological marker when compared to other archaeological material.² In view of the obvious stratigraphic significance of architectural remains such a general refutation seems uncritical, and in view of their relative abundance it may mean that a potentially rich source of chronological information remains untapped.

The objective of this paper is to discuss the undeniable restrictions in the use of architecture as a chronological marker and to present various examples where architectural data do provide reliable chronological information. This material might, after further examination, serve as a sound basis of a systematic search for criteria of chronological significance in the treatment of architectural remains.

Preliminary considerations

The general difficulty of any chronological study stems from the simple fact that comparable data can result from different causes; such data are not valid chronologically. Under-

1. I would like to express my gratefulness to Emmanuelle Capet and Manuel Gerber for their precious remarks.
2. In the ancient Near East bibliography, the low number of chronological studies based on architecture, as compared to those based on other archaeological artifacts, reflects this reality.

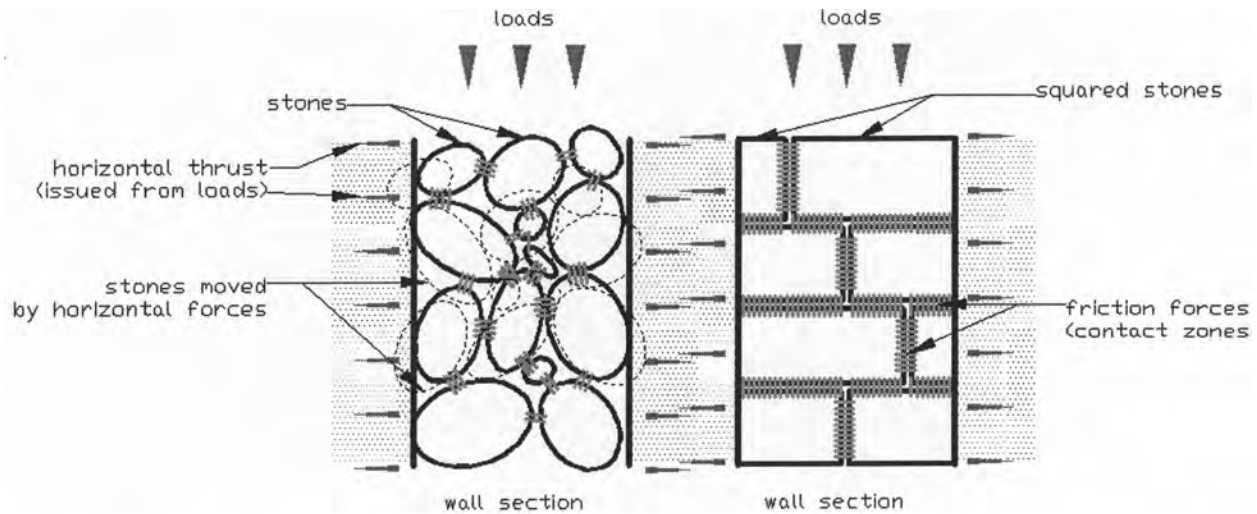


FIGURE 1. The resistance of the construction elements in a wall to horizontal rejection forces is proportional to the contact zones between these elements. Two opposed cases.

standing the causes is the only way to avoid misleading chronological conclusions. Needless to say this is too ambitious a goal for ancient architecture. A safe analysis of ancient data should be based first on constant causes, as laws of physics. Therefore, this article will emphasize the study of building techniques.

Apart from the cultural package (mainly ideologies, traditions and aesthetic values), architecture is particularly conditioned by science: the existence of a construction, as its persistence, is the result of structural integrity requirements. Still, functional explanations of architecture are few; aesthetic, traditional and ideological explanations are attempted, and embedded sometimes in a fallacious typological framework. The aesthetic use of ashlar facing masonry was never put in doubt, while a functional use is rarely discussed, even in cases of massive presence. The LBA temples of Dagan and Baal in Ugarit, and the Southern Palace of Ibn Hani make it necessary to review such generally accepted ideas. The deep foundation walls of these constructions—down to 3 meters in Baal temple and some parts of the palace—with an outer facing of perfectly squared ashlar offer the evidence of a use for ashlar facing which is strictly functional.³ The only plausible explanation stands in the required stability: the contact between perfectly squared stones provides optimum resistance against horizontal thrust, as the Figure 1 shows. In the case of the palace, which is the best documented construction among the three, exceptionally important pressures could be supposed to derive from the huge masses of imported fillings that served in raising up the palace.

The well known aesthetic interpretation of the so-called “saw facades” of Neobabylonian houses is a case in point: seen as an expression of a locally and chronologically distinct style (Reuther 1968: 83–84), these walls misleadingly seem to bear witness to a degree of decoration and aesthetic awareness unheard-of in earlier habitations of comparable wealth. However, there is a much more straightforward functional explanation, namely that these walls are the least complicated and most economic solution to the problem of fitting orthogonal rooms (defining the brick orientation) into a non-orthogonal space delimited by existing (?)

3. The functional importance of ashlar facing vary according to the case, while on the contrary, an aesthetic function for ashlar facing could be completely absent. The Egyptian Small Block (Zoser) masonry (2650 B.C.), Wright 1997/1998: 571, proves that a rough hewing is sufficient to obtain a perfect regular fine jointing outward appearance.

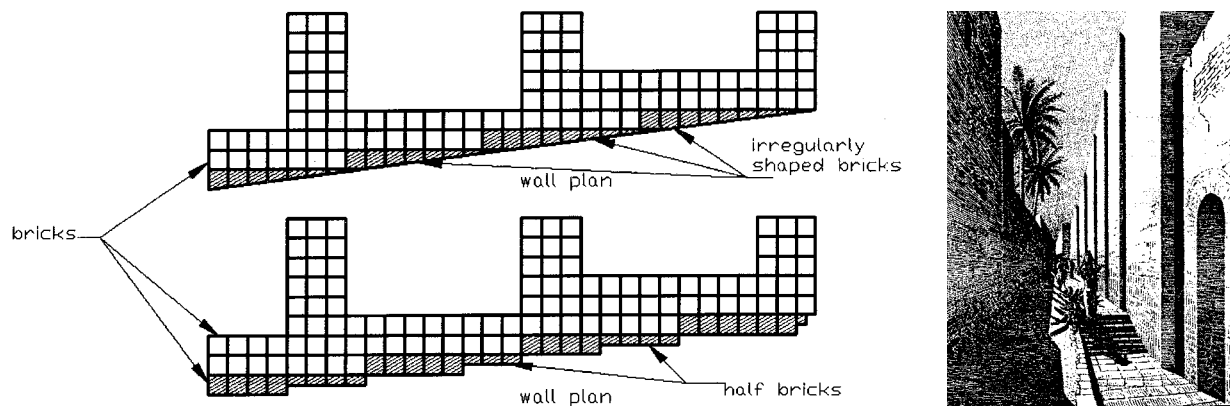


FIGURE 2. Functional (above left) and aesthetic (above right, after Reuther 1968) interpretations of the so-called “saw facades” of Neobabylonian houses.

streets. If anything, the “saw facades” bear witness to an unwillingness to make irregularly shaped bricks⁴ (Fig. 2).

Handling Different Kinds of Data

Ground plans

A plan is, at first glance, a form or a shape: it constitutes the most direct and complete architectural data archaeologists can obtain.⁵ A given plan reflects a solution found for a specific need⁶ at a given time⁷ in a given place.⁸

Comparing plans hints to comparing spatial organizations. The spatial organization of a given construction has extensions that go beyond the limits of the preserved—generally treated—plan. Vertically, the construction could have existed on more than one level. Horizontally, the organization of a construction extends within a larger organization which is that of its built-up area (rural or urban); it depends on it in various degrees following mainly the nature of the construction itself. Accordingly, the similarity of two plans can’t be considered chronologically significant in the absence of similar volumes and, to different degrees, of similar general layouts.⁹ Therefore, common comparison procedures, limited to the unique preserved level, remain disputable.

Additionally, organizational comparisons of chronological aims are established on the optimistic assumption that common needs in comparable cultures lead to comparable con-

4. Curiously, the writer seems to be aware of the interest of this method as a solution to avoid “braking” bricks. He insists though on the aesthetic priority since the number of resulting corners exceeds, according to him, the real need. Reuther 1968: 84. However, the high number of corners allows a smooth grading with a half brick thick “steps” as illustrated in figure 2.
5. It is probably for this reason that some architectural comparative studies are limited to the plan.
6. In reference to the functional aspect of the plan.
7. In reference to cultural, economic and political conditions.
8. In reference to field data such as geology, climate, etc.
9. It is the case for instance of houses in an urban environment, as we shall see further in the study of volumes. On the contrary, monumental constructions in ancient Near East are generally independent structurally speaking: their interior organization is less influenced by the external one. It is their position into the agglomeration that could be considered.

structions. The option of obtaining different constructions in spite of common needs and cultures can't be ignored; a considerable source of information risks being missed ignoring these "incomparable" constructions. But it is mainly the fact that also different needs, even in different cultures, could lead to comparable constructions, consequently to comparable plans, that constitute a serious failing of this comparative method.¹⁰

This does not mean that, in the lack of the built-up area layout or of data allowing a volume reconstitution, plans should be ignored; the chronological importance of a plan could be considered proportional to its complexity. In other words, the more complex similar plans are, the likelier this similarity could be chronologically significant. Accordingly, the validity of the so-called "front room house"¹¹ "type" for instance remains dubious; one wonders whether this simple plan should not be considered as reflecting a general tendency.¹²

*Techniques*¹³

The complexity of studying techniques as a chronological indicator stems from the large number of decisive parameters that suggest the preference of one technique over another. The main parameters are:

1. Geology: imposes the choice of construction materials and methods of constructions;
3. Geophysical conditions: such as earthquakes, floods, etc., that could require framework, high stone "socle", etc.;
4. Climate: influences covering systems, plan orientation, disposition of open and covered spaces, etc.;
5. The condition of the construction field (if it is virgin or not): influences foundation systems;
6. The type, size and location of the construction: which boils down to its foreseen durability, the dimensions and height of rooms and its relation to the neighboring constructions;
7. The available construction knowledge: that could be local or foreign;
8. A compromise between economic considerations and structural integrity requirements;¹⁴
9. Cultural values (aesthetic, traditional, ideological, educational, etc.).

It is possible to divide these data into two categories. On one hand, geological, geophysical, climatic and construction field conditions constitute what could be called "field data". They are imposed. On the other hand, the construction itself, the applied knowledge and the

10. One of the most striking examples in the history of architecture is the so-called plan of "basilica", adopted for churches since the IV century, used originally for covered markets and courts of justice. Gombrich 1992: 94–95.
11. Expression used in McClellan 1997: 37.
12. As proposed for the megaron plan for instance (Treuil et al. 1989: 136). Contesting such typologies exceeds the object of the present paper.
13. It is important to distinguish in any construction method two elements: the concept (the idea) and the realization (construction materials). This chapter concerns mainly the design (that has sometimes a crucial link with the materials). The materials with which the idea is achieved are treated in the following chapter, "materials".
14. This compromise can not be supposed systematically correct; some constructions failed while others were built with exaggerated structure.

economic consideration in view of the safety requirements constitute “human data”: they are decided upon, to a certain extent, by human choice as conditioned by “field data”. It is true that a clear-cut distinction between the two categories of data is impossible; the available knowledge for instance, could be imposed or restricted by traditions, while the choice of a material could be made for an aesthetic reason, independently from the geological surrounding. Yet, despite its roughness, the distinction between “field data” and “human data” allows to make the following observations: common “field data” impose a number of common techniques, that are more or less “basic” for all constructions. The remaining techniques stemming from “human data” are “selected” according to the construction.

Being imposed by field data, “basic” techniques enfold a major chronological problem: their dependence on “field data” entails a temporal persistence that deprives them from chronological significance. This problem is absent in a small category of “basic” techniques; a category that encloses techniques indicating a lack of knowledge. Once knowledge is acquired, they disappear. Circular and semi-circular dug houses attested in the Near East since the Kebarian period (Aurenche and Kozłowski 1999: 27) offer a clear example. Once masonry had been discovered these houses were replaced definitely during the PPNB (Aurenche and Kozłowski 1999: 49) by constructed walls on floor level. Determining the time of appearance of “abandoned” techniques, as shown, is crucial; in case of well established knowledge, they could be helpful in rough dating. Of course, it remains sometimes unknown whether the appearance of a “basic” technique in a given place is the result of a foreign influence or of a natural psychological human reaction to the “field data”.

This last problem concerns a part of “selected” techniques. The relative independence of some “selected” techniques from “field data” allows a temporal and geographical widespread that prevents them from having any chronological significance. Such techniques are generally simple (mono-material or/and any material), functional and economic. The stone wall bases assembled with a double row and a filling is an example. Turning ancient wall into new wall basements by leveling is another.

The economic issue can restrict the spread of a “selected” technique and enhance, consequently, its chronological significance. Another cause of the spread restriction of a technique could be its complexity. Additionally, complex techniques express an advanced know-how which is the outcome of a gradual response to the environment and as such, they reflect appreciable experience. Therefore, it is unlikely that they are the result of only local development. Indeed, massive architecture requiring sophisticated technical knowledge—as a result of the forces imposed by appreciable loads in addition to foreseen durability and aesthetic needs—offers a worthwhile source of chronological information. The following examples of “selected” techniques are used in palatial and sacred constructions. Such constructions as we know constitute a considerable part of the Near Eastern massive architecture corpus.

The use of longitudinal beams in the foundations of massive mud-brick walls, is documented in the Northern Levant, in Early Bronze Age temple “Bau II” of Halawa B (Orthmann et al. 1989: 91–92) and in Middle Bronze Age I temples of Alalakh (levels XVI–VIII) (Woolley 1955: 47, 55 and Fig. 18). Intended probably to alleviate differential settlement¹⁵

15. Considering the complementary properties of earth and wood. See further, note 21.

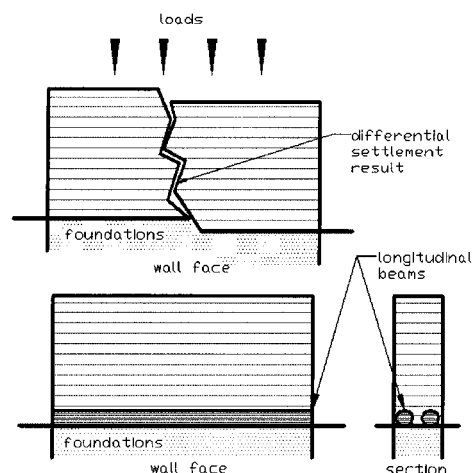


FIGURE 3. Longitudinal beams introduced in massive walls foundations to alleviate differential settlement.

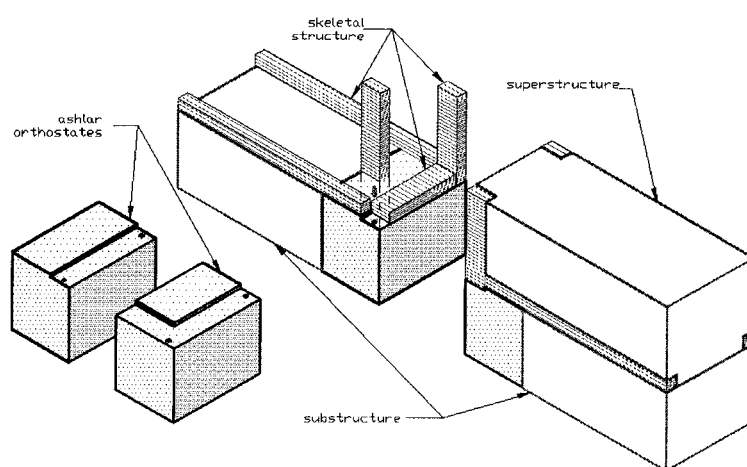


FIGURE 4. Skeletal structure fixed, at wall ends, on squared blocks presenting mortises and slots.

(Fig. 3) the technique is found earlier in the Anatolian region.¹⁶ Its refinement lies in the subtle understanding of the material properties it shows.

The skeletal structure set on stone is another example of “selected” techniques. The traces of this type of skeletal structure, fixed on ashlar masonry with squared blocks presenting mortises and slots at least at wall ends (Fig. 4) could be discerned in most of Middle Bronze Age palaces and temples of Ebla.¹⁷ It is mentioned in some LBA houses of Mumbaqqa,¹⁸ Emar (Margueron 1982: 23), the “Palais Sud” of Ras Ibn Hani (Lagarce 1982: 31), and palaces and houses of Ugarit.¹⁹ Independently from the main construction material of the wall²⁰ the usefulness of the wood structure consists of providing the wall with a flexibility²¹ that increases its resistance to different forces. Within the limits of the Levantine area, Ebla is most likely the starting point for the influence of combining the skeletal structure with the fixing system on ashlar. The origin of the technique would be possible to establish with further investigations.²²

Multiple techniques characterize the two sites of Alalakh and Qatna within the Levantine region, and therefore are worth noticing. Decorative “facing orthostates”²³ fixed to mud-brick walls with the help of wooden beams²⁴ were found in prestigious rooms of palaces at

16. This technique is attested in Beycesultan (level XIX) since the forth millennium (Naumann 1971: 58, fig. 34 et 35). The foundations in this case are made of stone. Nevertheless, the utility of the longitudinal beams remains the same for the upper mud-brick walls.

17. The presence of wood in walls is mentioned by the excavator in Palace Q (Matthiae 1980: 7–8, note 38). Analytical and comparative study of the architecture in Ebla—Carried out during my PhD thesis entitled “Techniques et matériaux de construction à l’Age du Bronze au Levant du Nord”, defended on the 30th of January, 1999, currently revised for publication—allowed me to conclude that this technique is quite common in MBA massive architecture of Ebla.

18. In houses B and C for instance. Machule et al. 1986: 106 et 1987: 107.

19. Attestations are numerous, among them we can recall Callot 1986: 741 for the “Palais Royal”, Schaeffer 1962: 125 for the “Petit Palais”, Yon et al. 1990: 14, 16 for houses of the “Centre de la ville”.

20. The skeletal structure is incorporated in stone walls in Ras Ibn Hani and sometimes in Ugarit; for the rest, it is incorporated in mud-brick walls.

21. Just like any other fibrous material, wood has a good resistance to cutting, bending and traction forces, while earth and stone have good load resistance.

Qatna and Alalakh VII.²⁵ Conic column bases stabilized in pebbles, bronze hinges and sunk door sockets were found in both palaces of Qatna (Du Mesnil Du Buisson 1935: 75–76, 1928: 7, pl.IV) and Alalakh IV (Woolley 1955: 124, 118). Furthermore, it is not unlikely that the ash traces discovered by Le Comte De Mesnil at the base of a wall north of the “Haut Lieu” in the palace of Qatna correspond to a skeletal structure technique, common in the palaces VII and IV of Alalakh,²⁶ but also in the above-mentioned sites. These technical similarities form a chronological value to be developed in the following chapter.

A difficulty lies sometimes in determining whether a technique is “basic” or not. The progressive spread of stone substructure in the Northern Euphrates during EBA, makes the technique appear as a newly discovered “basic” one. The map of figure 5 shows sites where a stone socle was introduced to walls after a first occupation of exclusively mud brick architecture (M marked sites). On other sites, stone socle existed since the first occupation (S marked sites). By the end of EBA the technique covers all the region. But in iron age, and in this same homogeneous environment, appears again exclusive mud-brick architecture (in Tell Ahmar for instance). The technique then is not “basic”. For some reason(s) (economic, traditional?) this technique was “selected” and used for considerable periods of time. In the limit of the same site and occupation, it appears as a “basic” technique. As the example shows, only a wide geographical and temporal study is bound to bring to light the chronological information these simple “selected” techniques enclose.

Materials

It is, naturally, in the framework of the technique that the study of materials could constitute a source of chronological information. Obviously, such study concerns only techniques requiring specific material for their achievement. The study of techniques completely inde-

22. In the Aegean world, walls with skeletal structure introduced in mud-brick and set on stone appeared during the last part of the seventh millennium (Early Neolithic) (Treuil et al. 1989: 131). Some geophysical information (Treuil et al. 1989: 93) allow for relating the development of this technique in the region to the existing risk of earthquakes. In the Anatolian region, the presence of a developed skeletal structure is documented since the second half of the 3d millennium in Troja and later in Beycesultan (Naumann 1971: 58, 59, 74, 84, 86). It becomes common in the L.B.A. Nevertheless, in both the Aegean and Anatolian worlds, examples of ashlar wearing mortises and slots are known only starting from the L.B.A. (Naumann 1971: 74, 84. Wright 1998: 567).
23. Their decorative role is certainly dominant; detailed architectonic analysis is developed in my thesis (note xvii).
24. In the framework of my PhD thesis (note 17): the fixing system was possible to conclude in Alalakh, as a result of a meticulous analysis for all descriptions of walls given by the archaeologist (Woolley 1955: 92–123), while the interpretation given by the author in Qatna (Du Mesnil Du Buisson 1935: 73, Pl. XVII, 2) was reviewed in the light of a comparative study that allowed the restitution of wooden fixing beams behind the orthostates.
25. It is mainly in this palace (and in temple I) that polished basalt orthostates are used for decoration. The detailed architectonic descriptions of both palaces, VII and IV (Woolley 1955: 92–123) allows to notice that the use of decorative orthostates is considerably reduced in palace IV; rough and plastered orthostates used in humid rooms are mainly functional.
26. The mass of mud brick walls allows for this interpretation. The ash traces are documented (Du Mesnil du Buisson 1935: 98, tables XXIX and XXX/8) without being interpreted.

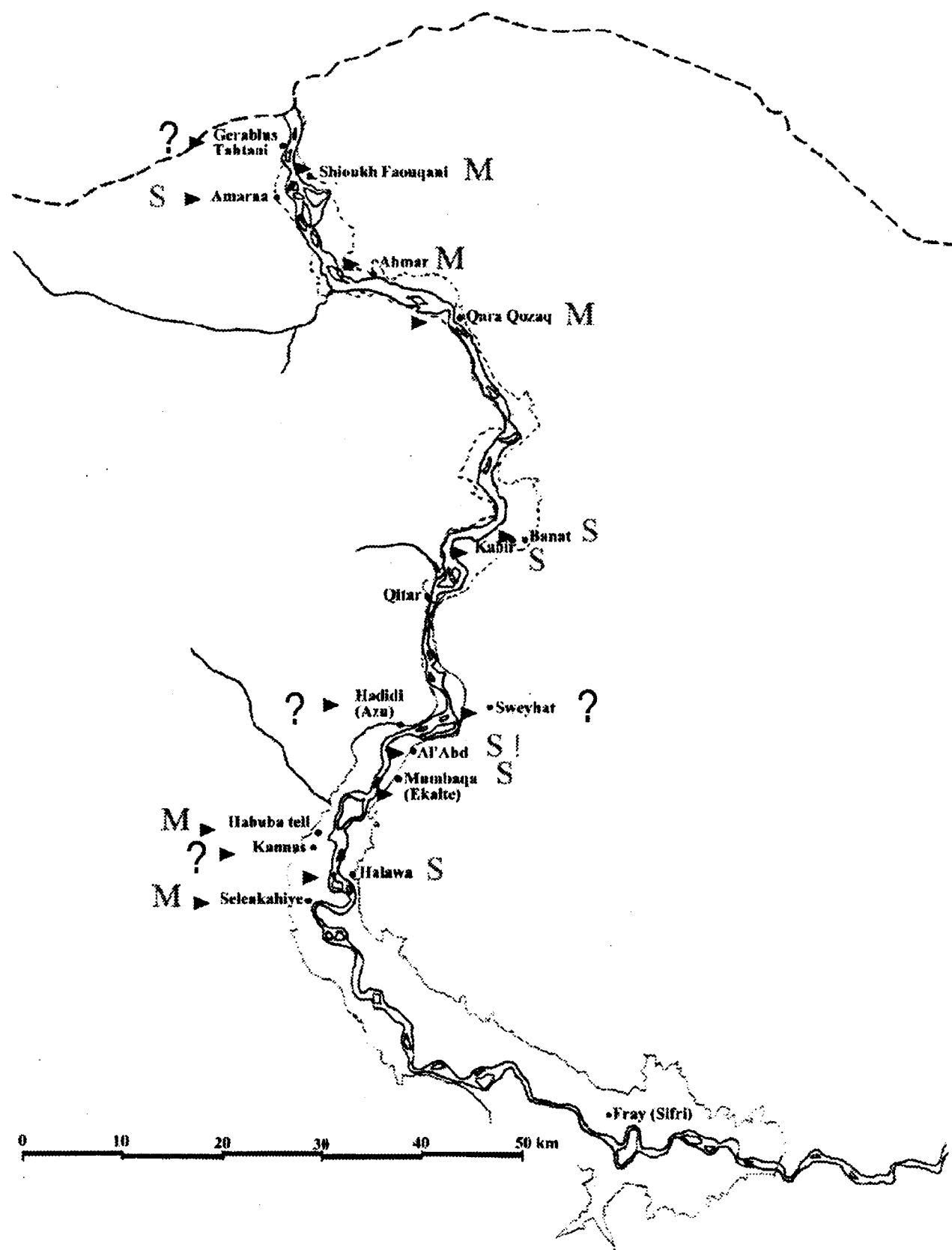


FIGURE 5. EBA sites in the Northern Euphrates where stone was introduced in mud brick architecture after the first occupation (M), or at the first occupation (S).

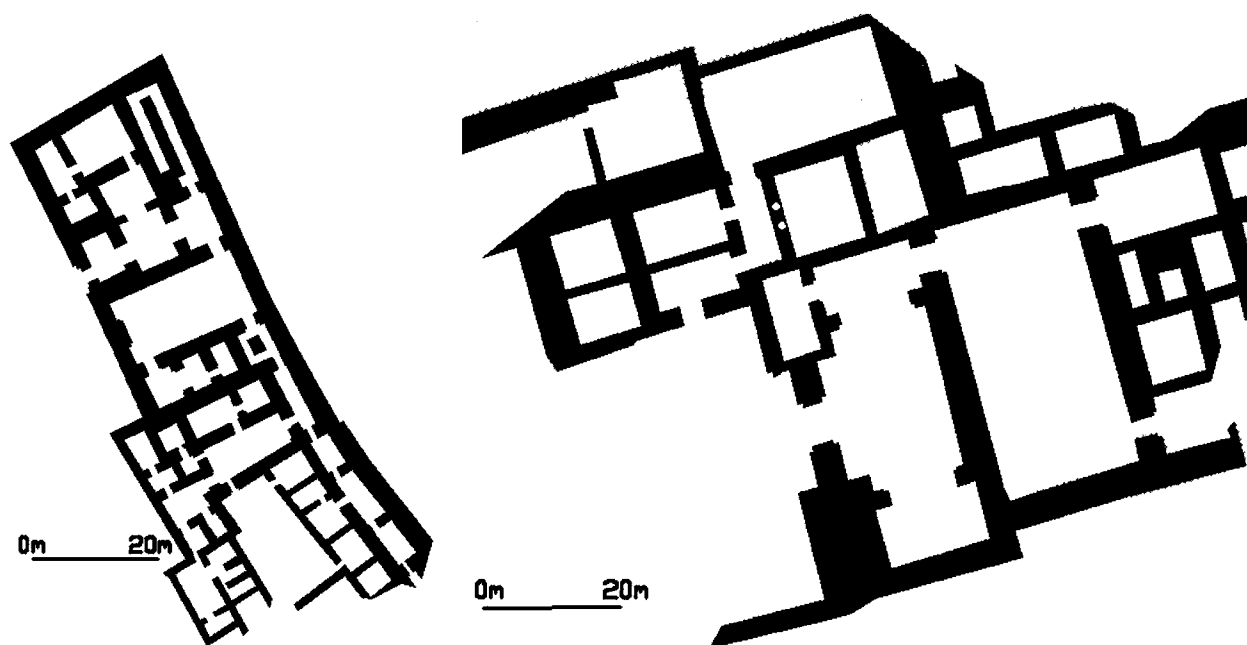


FIGURE 6. The plans of the palace of Qatna (left) and the palace of Alalakh VII (right). The shapes of both plans present no analogies.

pendent of construction materials²⁷ is restricted as such to the “idea” or “concept,” i.e., purely the technique.

The determination of accessibility of materials could indicate the direction in which an architectural influence has taken place. The birth, the development and simply the common use of a technique in a given place are all related to the easily accessible material(s), essential to its execution. They can also be related to the absence or rarity of a construction material; it is not by accident that vaulting techniques for instance are more developed in Mesopotamia than in the Levant, where construction wood, indispensable for flat roofing, was mainly imported.

Basalt and limestone are the main ashlar used respectively in Alalakh and Qatna. Nevertheless, conic bases²⁸ are made of basalt even in Qatna, just like some of the above-mentioned “facing orthostates”, the distribution of which within the rest of the limestone orthostates indicates a pure aesthetic luxurious feature, comparable particularly to the situation in palace VII.²⁹ It is more likely then that Alalakh is the source of influence.

It is important to stress here the proportional relation between the comparable elements and the validity of chronological information. The series of resemblances found in Alalakh palatial architecture and the palace of Qatna is of a high chronological significance. We

27. These techniques are generally “mono-material”, which simplify their spreading; they could be achieved with bricks, stones, etc., as is the case for corbelled vaults or some simple masonry techniques like bounding.

28. Basalt conic column bases are found on the site of Alalakh starting from level VII: In palace VII and IV, and temples V and I (Woolley 1955: 116, 123, 124 fig. 42). In Qatna such bases are mentioned in Du Mesnil Du Buisson 1928: 9, 15, Pl IV.

29. It is interesting to mention here the bitumized limestone orthostates in the Northern palace of Ugarit. I tend to believe that this was done to simulate basalt stone, absent in the architecture of Ugarit, in order maybe to reinforce the luxurious aspect, and maybe imitate contemporaneous important constructions.

should keep in mind, and according to the study of architectural development in Alalakh,³⁰ that the architectural identity of level IV appears to be the continuity of the newly established identity in level VII. In the light of comparisons which attempt to establish a date, one might suggest a hypothetical date for the palace of Qatna that is roughly contemporary to the palace VII of Alalakh.

This series of resemblances in the two palaces is in a striking contrast with the absence of any comparable elements in their plans (Fig. 6). Not only the insufficiency of plan as a unique source of chronological information is proved in this example, but also the scientific danger of missing precious sources of chronological information by ignoring construction methods analysis.

Volume

It is through analytical and comparative study of archaeological data, plans and techniques, that volumes can be reconstituted. However, reconstitution of volume poses a number of difficulties that result easily in the uncertainty of the outcome, hence the necessity of implementing extreme care so as to avoid hasty chronological conclusions. Some of these difficulties are: the deliberate or accidental miscalculation of the structural integrity requirements by the constructors, architectural modifications of the construction during its lifetime,³¹ insufficient or misleading volume indicators,³² etc.

Independently of those difficulties, the conclusions about chronological validity in the chapter about plans apply to the study of volumes. In other words, three points must be kept in mind: first, the general layout of the built-up area; second, common needs don't lead systematically to comparable constructions; and third, the more complex similar volumes are, the more chronologically significant this similarity is. But the uncertainty of the outcome, and according to the above-mentioned difficulties, is higher in proportion to the complexity of the volume.³³

A detailed architectural and archaeological study of dwellings³⁴ made it possible to suggest for M.B.A. houses of Halawa and a part of L.B.A. houses of Mumbaqa, as already suggested for L.B.A. Emar,³⁵ a volume with one large covered room and two double floor small rooms (Fig. 7a). L.B.A. houses in Bazi, Hadidi and Mumbaqa, could be reconstituted with a covered rectangular big main room; it is bordered with two-floor smaller rooms on its long (seldom short) sides in Mumbaqa (Fig. 7b), on two successive perpendicular sides in Mumbaqa,³⁶ on its three sides in Hadidi (Fig. 7c) and only on one of its long sides in Bazi (Fig. 7d). Some of these different volumes coexisting in the same site are due probably to economic and social heterogeneity within the same society. The chronological significance goes therefore, not to the size or the layout of the plan, but to the principle of associating one large mono-level room to double-floor small rooms. As it was already mentioned, the reconstituted vol-

30. In the framework of the mentioned PhD thesis (note 17).

31. This point is detailed in Margueron 1986.

32. Elements like paved floors or "big" spans, still mostly considered as indicators of open courtyards for instance, cannot be taken seriously in absence of a general analysis of other data.

33. If more than a restitution is possible for one or a few architectural elements, each combination of these restitutions offers a suggestion of a volume restitution; the number of combinations increases with the multiplicity of architectural elements. The more numerous the solutions, the less likely one given is. Comparisons of similar volumes can be helpful in increasing the likelihood of one restitution being the right one over another suggested for the same plan.

34. Carried out during my PhD thesis.

35. Margueron 1982: 35–36.

36. Like houses M, E, Q and G.

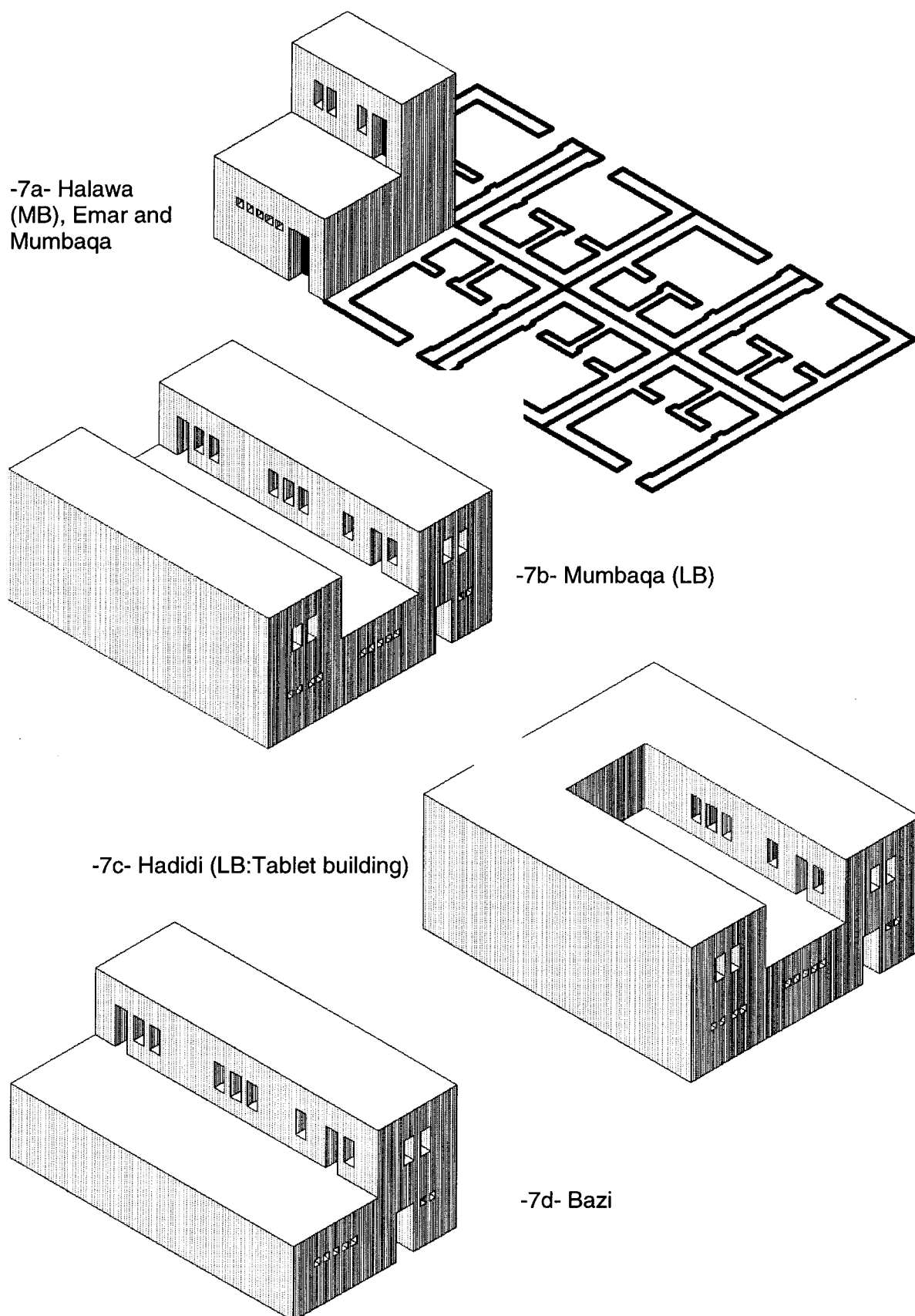


FIGURE 7. Different volumes restitution (a) Halawa (MB), Emar and Mumbaqa (b) Mumbaqa (LB) (c) Hadidi (LB: Tablet building) (d) Bazi.

ume should appear logical in relation to its surroundings. Among these sites, the largely excavated ones have allowed us to consider the urban situation. These volumes seem to be solutions that fit housing in crowded built-up areas (party walls are represented blank in Fig. 7), where horizontal expansion is difficult. A second floor (or even a third in Mumbaqa) could be reconstituted over small rooms, and a terrace above the largest room. In view of the comparable general organization and the regional limitation³⁷ of these volumes during a certain period, it is possible to consider them as a local solution that seems to have spread during the L.B.A. period.

In case we accept these restitution propositions as the “correct” ones, the example shows:

- Firstly, that even for plans of modest layout, we are far from defining the causes of the volume resulting from the restitution. Yet, understanding the causes, as has been clarified in the beginning of the paper, is the only way to avoid misleading chronological conclusions. The urban situation in this example seems to constitute one cause, the part of the volume functionality understood by the archaeologists constitute another cause, the climate or “field data” might constitute others . . . etc.

- Secondly, the above-mentioned common organizational principle upon which these houses are built would have eluded us in case of limiting the observations to similar volumes.

Conclusion

The common use of plans at the expense of other architectural data when architecture is explored as a source of chronological information is proved to be unjustified.

For plans, as for construction methods and volumes, a proportional relation between complexity and chronological validity is to be generally admitted. Accordingly, monumental palatial architecture appears to be a source of chronological information of particular interest; it offers generally complex plans and “selected” complex techniques.

Considerable restrictions and uncertainties remain when using plans or volumes as source of chronology. In contrast, being based strictly on real evidence, the study of techniques has been proved to be a most secure and valid way to chronological information.

Although provisional dating through architecture cannot be contemplated in the absence of dated material in at least one of the compared levels on different sites, examples showed how a detailed architectural analysis could be useful for provisional dating. In view of the relatively slow spread of architectural knowledge, one has to admit that architecture remains a rough dating indicator.

In conclusion, and in spite of the undoubted necessity of dating material for an efficient use of architecture in chronology, we have seen that deficiency in dating material could be compensated for by a meticulous analysis of all architectural data.

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37. The absence of these volumes from the coast and the inner regions of the Northern Levant enhance their chronological significance, although the technical realization differs in details from one site to another despite the geological homogeneity.

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The “Kranzhügel” Culture: Fact or Fiction?

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Abstract

In Upper Mesopotamia, between the rivers Balikh and Khabur, several Tells show a particular design.

Their shape is circular or polygonal, they consist of an elevated central part and an encircling lower town. A century ago, they were discovered by Oppenheim who labeled them as “Kranzhügel”. Since the 70s, they were generally regarded as belonging to a distinct cultural unit of the 3rd millennium B.C., the “Kranzhügel” Culture.

In the way it is generally used, this term seems to be inadequate. Not every tell of Oppenheim's list is actually a “Kranzhügel”. At least one “Kranzhügel” is of a second millenium date. Between the two partially excavated “Kranzhügel” sites of Beydar and Chuera, there are many similarities, but also remarkable differences. On the other hand, several tells in the vicinity of Chuera show a material culture and site history very close to that of Chuera, but they are no “Kranzhügel” sites.

Introduction

The appearance of the “Kranzhügel” is a peculiar development in the history of the early Jazirah, but the cultural importance of the site shape has been overestimated. In the first centuries of the 3rd millennium B.C. upper Mesopotamia saw the rapid extension of human settlements. Hundreds of new sites were founded and many of them have turned into virtual cities at the middle of the millennium.¹ Some of these tells show a peculiar shape, which attracted scholarly attention even before one of these sites had been investigated more deeply.

Max Freiherr von Oppenheim, who travelled in the region in 1899 and 1913 recognized several tells with a circular or polygonal shape² which consisted of two parts: a central upper town and an encircling lower town. He labeled this type of tell “Kranzhügel” (annular tell or “cup-and-saucer” tell³ in English). He thought they were remains of a mighty ancient kingdom he was unable to date at that time.

The distribution of “Kranzhügel” type tells is indeed limited to a specific region between the Balikh valley and the Khabur river system in the territory of the modern state of Syria (Fig. 1). The westernmost site is Tell Ghajar al-Kabir, ca. 30 km east of the Upper Balikh. To the east Tell Bati north of Hasseke and to the south Tell Malhat ad-Deru mark the end of their distribution. These sites were surveyed by means of airplane photography by Lauf-

1. Cf. the TAVO map of Finkbeiner and Röhlig 1988.

2. Oppenheims diaries were partly published by Moortgat-Correns 1972: 25–52.

3. The term “cup-and-saucer” tells was, according to my knowledge, introduced by Diederik Meijer in a lecture on the 44. RAI (1997) in Venice.

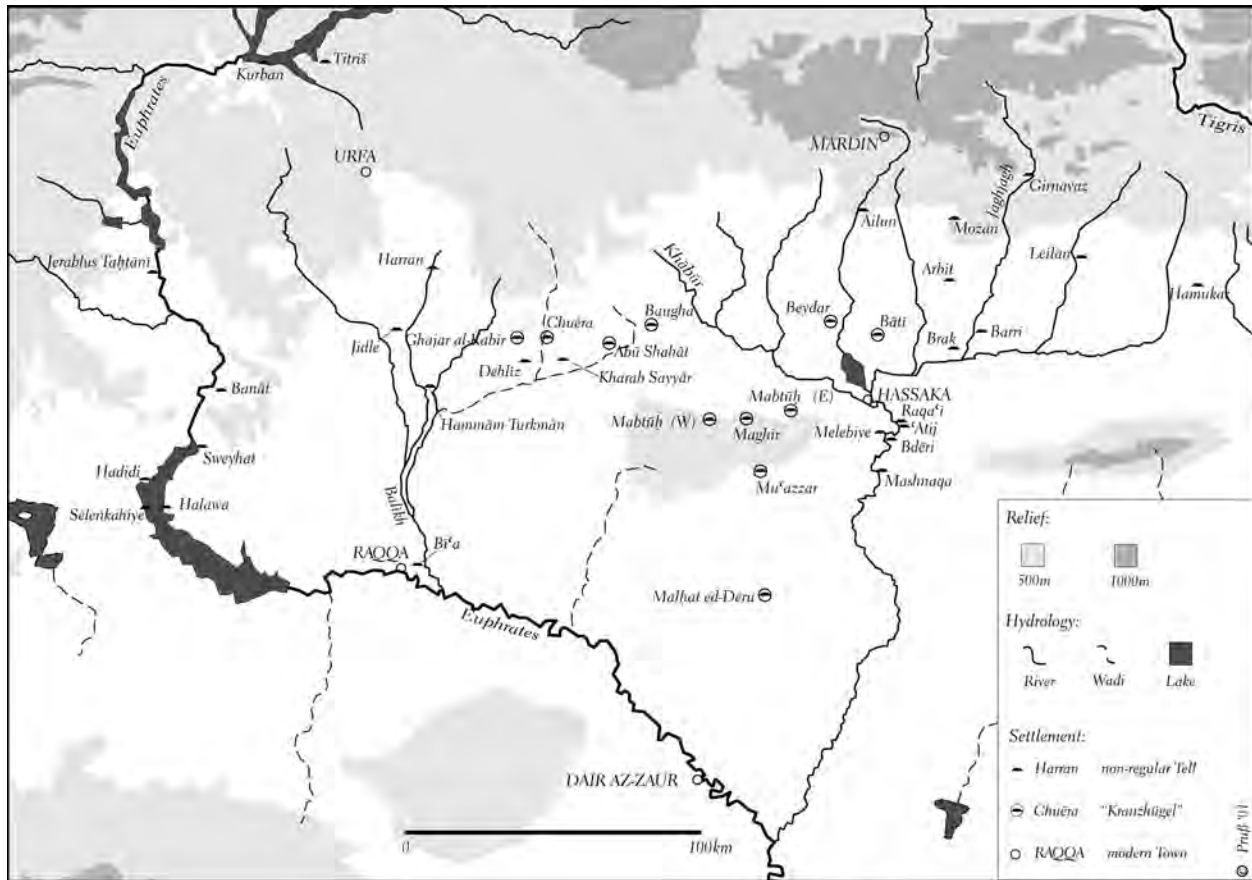


FIGURE 1. Map of the western and central Jezirah with distribution of annular tells ("Kranzhügel").

fray and van Liere in the 50s.⁴ They explained them as settlements of a, at least partially, nomadic population.

Oppenheim's ideas were picked up by Ursula Moortgat-Correns, who combined them with observations at the largest "Kranzhügel" site of Chuera, where scientific excavations directed by Anton Moortgat had started in 1958.⁵ She explained the existence of these mounds as result of a big migration process of semitic-speaking nomads from the south towards the region north of the Jabal 'Abd al-'Aziz. In her eyes the "Kranzhügel" were founded consecutively along the track of these tribesmen.

Thomas McClellan and Anne Porter linked these tells with the "desert cities" of Jordan, especially tell Jawa.⁶ Their argumentation concentrates on the questions of water supply for these sites. They propose a wide-range system of water-collecting devices around the "Kranzhügel" and even water-filled ditches in the perimeter of some of them.

Jan-Waalke Meyer focused again on the nature of the "Kranzhügel" population.⁷ He regards it as being nomadic and tribally organized. The stelae at the outskirts of Chuera and other sites and the hilltop cult place at Jebel al-Beidha are in his eyes remains of an ancestor worship common to the inhabitants of the "Kranzhügel" region.

4. van Liere and Lauffray 1954/55.

5. Moortgat-Correns 1972. Cf. also Moortgat 1959: 13–14.

6. McClellan and Porter 1995.

7. Meyer 1997.

For Bertille Lyonnet the “Kranzhügel” were protective sites for a mainly nomadic population living in the region surrounding these tells.⁸ She compares them with circular sites in other regions of the world, e.g., Central Asia. In her eyes, they were not founded as settlements for a greater number of inhabitants, but consisting only some cultic buildings and some dwellings for the members of the elite.

Outspoken or not, all these authors regard the “Kranzhügel” sites as having a more or less uniform settlement history and material culture. Several authors⁹ used the term “‘Kranzhügel’ Culture” to design a distinct cultural unit. But is this really true? The excavations at a second “Kranzhügel” site, Tell Beydar, since 1991 under the direction of Marc Lebeau, give us the possibility to check the degree of uniformity between the Beydar and Chuera sequences.¹⁰ Furthermore, several EBA sites in the vicinity of Tell Chuera were surveyed within the framework of the Kharab Sayyar Project of Frankfurt University, directed by Jan-Waalke Meyer. Three seasons of excavations (1997–2000) at Kharab Sayyar itself provide us with another valuable 3rd millennium sequence.

Which tells are actually “Kranzhügel” ?

Before starting with the comparison of Beydar and Chuera materials it seems useful to make some rather formal comments on the list of “Kranzhügel” sites published so far.¹¹ Not every tell on these lists is actually a “Kranzhügel”. Tell Dehliz, for instance, is a “normal” tell without any trace of a lower town (fig. 5a). Tell Khanzir is not only a site of irregular shape, but also of a completely different date. According to data gathered during a visit in September 1997¹² it has mainly Iron Age and Roman occupation. Other sites which should belong to the list were omitted. Tell Ghajar al-Kabir, the westernmost “Kranzhügel” I have knowledge of, is mentioned by none of the above mentioned authors. There is even the possibility that sites matching the formal criteria of a “Kranzhügel” are not of EBA date. Khirbat al-‘Ajila, 6 kms to the east of Kharab Sayyar, is a tell with nearly perfect circular outer shape and a central upper town which has only second millennium occupation.

The upper towns of the “Kranzhügel” should not be mixed with the citadels or acropolai of other 3rd millennium sites, like Ebla or Tell Rimah. At these places, the citadels were built up with temples and palaces, reserved for an establishing religious and administrative elite. Those official buildings are also present at the “Kranzhügel” upper towns, but there the space was mainly covered with normal domestic occupation. In relation to the size of the whole tell, the citadels are therefore much smaller than the “Kranzhügel” upper towns. At Ebla, the citadel covers ca. 15% of the tell, while the upper town of Chuera measures about 50% of the site.

Beydar and Chuera: two formally similar sites

The comparison between Beydar and Chuera may begin with a look at the general development of both settlements. Both were probably founded during Early Jezirah I and inhabited until EJ V, the last centuries of the 3rd millennium. In Beydar (Fig. 2b), the lower town

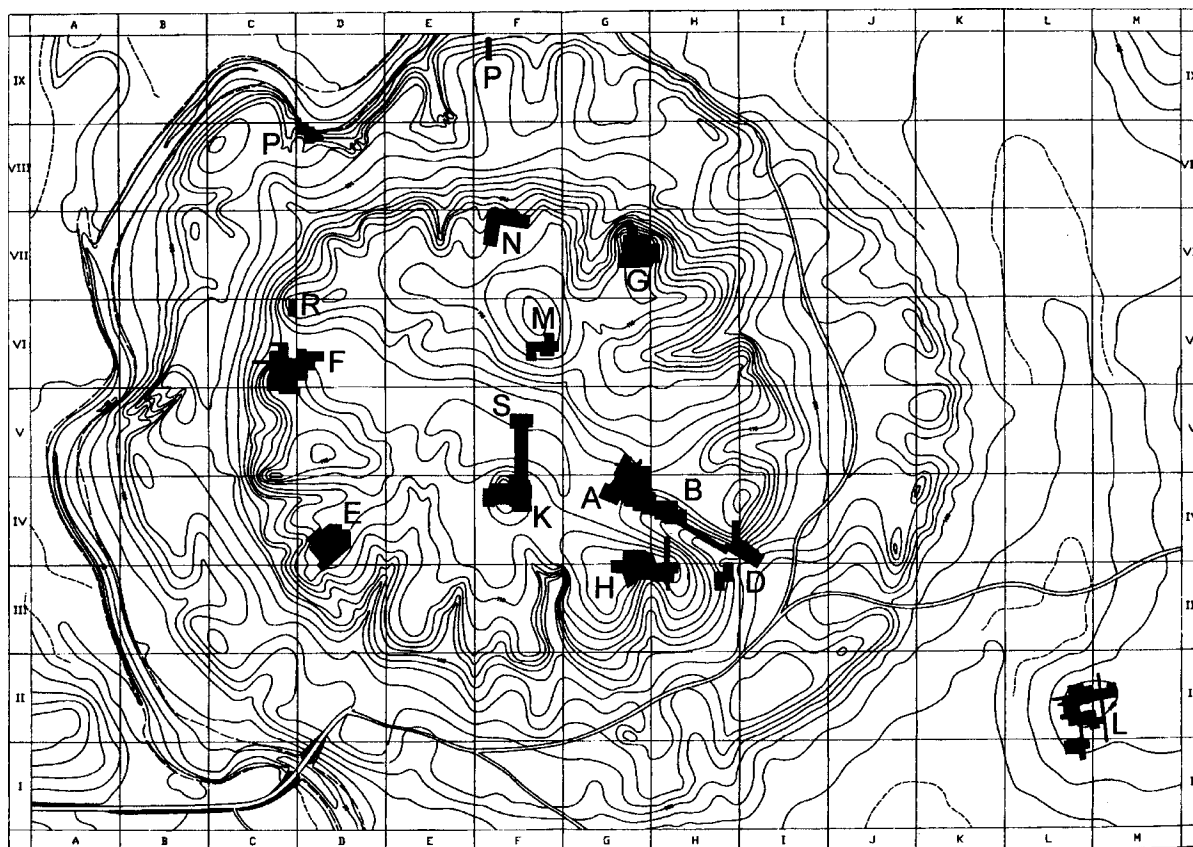
8. Lyonnet 1998: 180–184.

9. e.g., Kühne 1976, Lebeau and Bretschneider 1997: 151.

10. Preliminary reports are published in Lebeau and Sulaiman 1997.

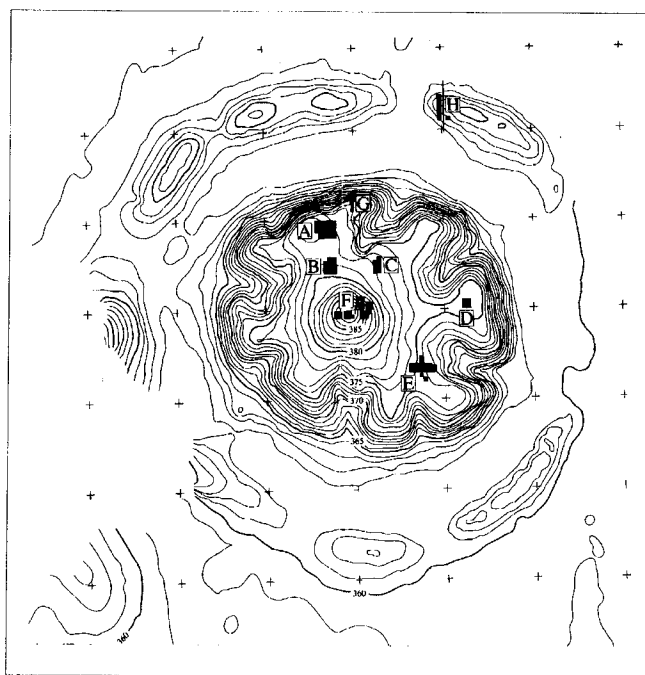
11. Moortgat-Correns 1972: Map 1; Lyonnet 1998: Fig. 4.

12. The visit was conducted by Jan-Waalke Meyer, Agnieszka Zysek and the author.



a

200m



b

FIGURE 2. Contour maps of Tell Chuera (a) and Tell Beydar (b; from Lebeau and Sulaiman 1997: 15).

perimeter was abandoned already in EJ II, the site was thereafter confined to the upper town.¹³ At Chuera (Fig. 2a), the lower town was still occupied in EJ IV (early Akkadian). Furthermore, there is evidence for the assumption that the lower town at Chuera may be a secondary development. In area P in the very north of the tell the virgin soil was reached in a sondage.¹⁴ The material found in the lowest levels of that sondage is later in date than the one from the lowest excavated levels of area K in the city centre. If this evidence is true for all of the lower town, its occupation started several generations after the foundation of the site. It is, however, unclear how the original tell was shaped and it may have been already a “Kranzhügel” of smaller dimensions then.

If one compares the pottery material from both Chuera and Beydar,¹⁵ one can observe a mixture of similarities and differences. A good example is the open shapes of both assemblages (Fig. 3). Several highly characteristic shapes occur at both sites, e.g., the high beakers with fine beaded rim and concave base, which are typical for both Chuera IE and Beydar IV¹⁶ (Fig. 3a-b). Earlier in date are flat-based beakers with pointed simple rim, slightly thickened in the upper part of the wall (Fig. 3e-f). But other shapes, equally characteristic for one of the two sites, are absent or very rare at the other. Examples are open rimless bowls with rounded or slightly convex base, low carination and straight wall (Fig. 3g), which are one of the frequent open shapes of Beydar IIIb. They also occur at many sites in the central and eastern Khabur triangle,¹⁷ but are virtually lacking at Chuera and other sites to the west of the Khabur. Round-based bowls with an S-shaped profile (Fig. 3h) are, on the other hand, characteristic for Chuera IC but are unknown from Beydar.

Another example of different material culture are terracotta figurines of standing females with flattened head, prominent nose and bended arms in front of the upper body (Fig. 4). They are frequently found in levels of periods IC and ID at Chuera. These figurines were even called “Tell Chuera type” by Leila Badre.¹⁸ To the author’s knowledge no figurine of this type has been found at Beydar, where anthropomorphic terra-cottas seem to be less frequent in general.

The glyptic of both sites shows differences, too. Several styles of the Beydar corpus are absent in the Chuera impressions, e.g., the seals in ‘Brak style’¹⁹ and the chariot scenes in a peculiar, crowded style.²⁰ There are, of course, also many comparable seals in a local north-Syrian style parallel to the ED III style of the South²¹ found at both places.

Chuera and sites in its vicinity

A step trench (area A; Fig. 5b) at the eastern slope of the EBA tell of Kharab Sayyar provides an architectural and ceramic sequence which covers a significant part of the 3rd mil-

13. Bretschneider 1997: 194.

14. Orthmann et al. 1986: 39–61.

15. For the Beydar pottery, only the material published so far (mainly in Lebeau and Sulaiman 1997) could be used for comparison. The author is aware of the fact that shapes missing there may actually be present at that site. Therefore, types already attested at Beydar and absent at Chuera should given more weight than absent types at Beydar.

16. For the terminology of the periods at both sites cf. Lebeau 2000: 186, table 3.

17. e.g., Bderi (Pfälzner 1988: Fig. 15h, 16a–e) and Brak (Oates 1982: Fig. 2, 33, 35).

18. Badre 1980: 80–81, type Euph. MA II; Klein and Hempelmann 1995: 237, form 1.

19. Bretschneider and Voet 1997: 166, ill. 5; cf. 165, fig. 29, 30 for comparable impressions from Brak.

20. Jans and Bretschneider 1998: Fig. 11–13, pl. 1.

21. Cf. Matthews 1997.

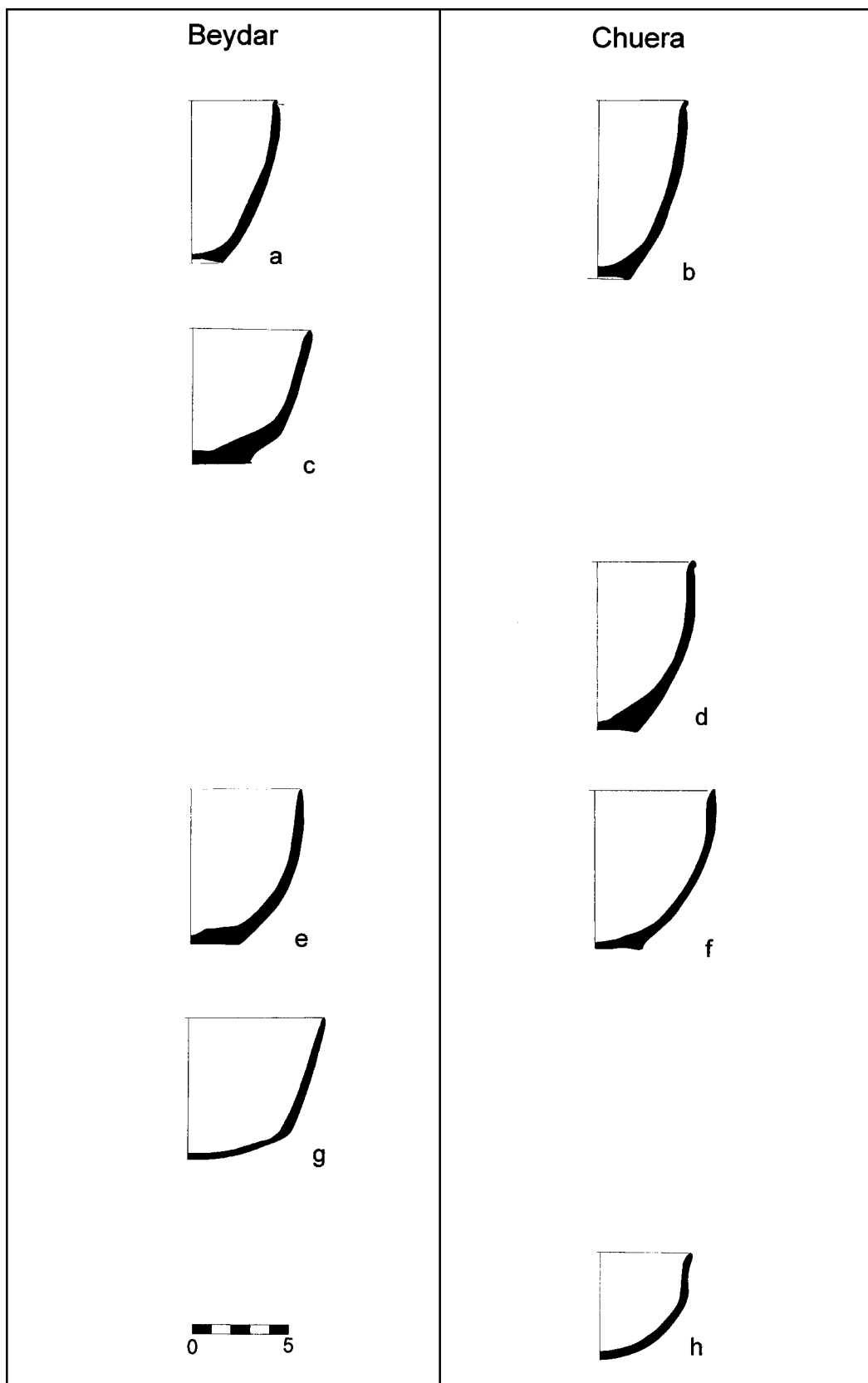


FIGURE 3. Open pottery shapes from Beydar (from Lebeau and Sulaiman 1997: 63, no. 8. 9; 139, no. 8. 9) and Chuera.

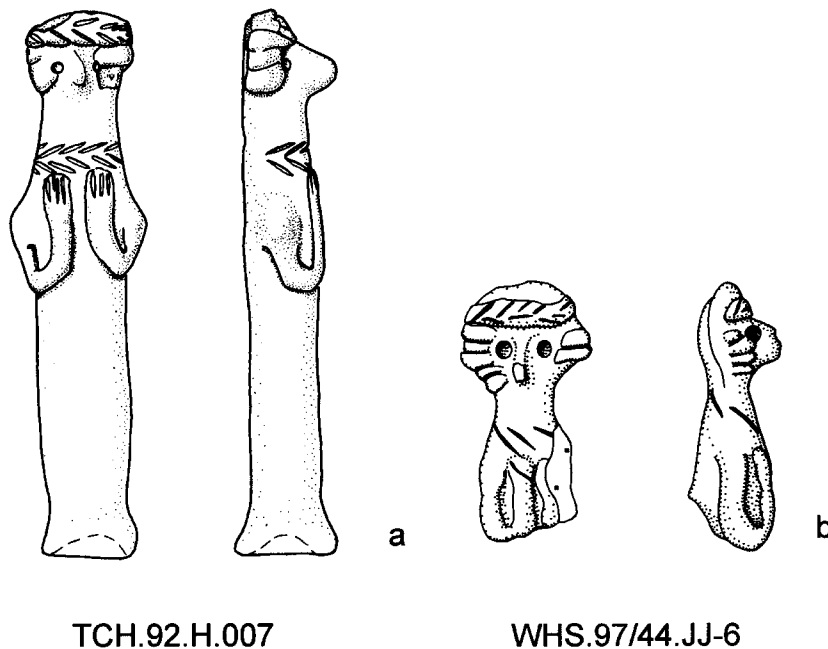


FIGURE 4. Terracotta figurines from Chuera (a) and Dehliz (b).

lennium. The pottery has been studied during the field season of 2000 and can be compared with the sequence of Chuera, which is situated 8 kms to the north-west of Kharab Sayyar (Fig. 1). Another rich pottery collection was obtained from the site of Dehliz, which was surveyed in 1997. Here, of course, no stratigraphic record is available so far, but the pottery can be compared with that of other sites. Despite a small Iron Age resettling the vast core of Tell Dehliz accumulated during the EBA.

Both sites are tells of a normal, not particularly regular shape without a distinction between an upper and lower town. The pre-Islamic tell of Kharab Sayyar is a slightly rounded square of about 180m side length (Fig. 5b) situated in the south-east of the regular Abbasid town area. Tell Dehliz has an ovoid shape and measures about 350 to 250 m (Fig. 5a).

The pottery assemblages of Kharab Sayyar, Dehliz and Chuera show an extraordinary high degree of uniformity. The characteristic types of both open (Figs. 6 and 7) and closed shapes (Fig. 8) of all three sites are almost identical. Moreover, the sequences span the same time: the latest shapes at both Dehliz (Figs. 6a-b; 7a; 8g) and Kharab Sayyar (Figs. 6e; 7c; 8i) are equivalent to those of period IE at Chuera (Figs. 6c, d; 7b; 8h) after which this site was abandoned for nearly a millennium. The earliest shapes of the Kharab Sayyar sequence, from levels near the virgin soil, antedate period IB pottery from Chuera which is the earliest material from there known until now (with the foundations of the EBA town still meters away).

The similarity in material culture is equally obvious in the field of pottery wares, their relative frequency and production techniques at all three sites considered here. The round-based bowls with S-shaped rim profile (Fig. 6i-k), for example, are always wheel-made with a rather carefully hand-scraped finishing at the lower part of the exterior surface. At the bent-rim bowls from earlier levels (Fig. 7g-i), this scratching is done in a much coarser way, while the later bowls and beakers (Fig. 6a-h) were finished on the wheel. Evidence for large-scale production of fine-rimmed beakers is given by waisters from Chuera (Fig. 6d) and Dehliz (Fig. 6b), but is so far missing from Kharab Sayyar.

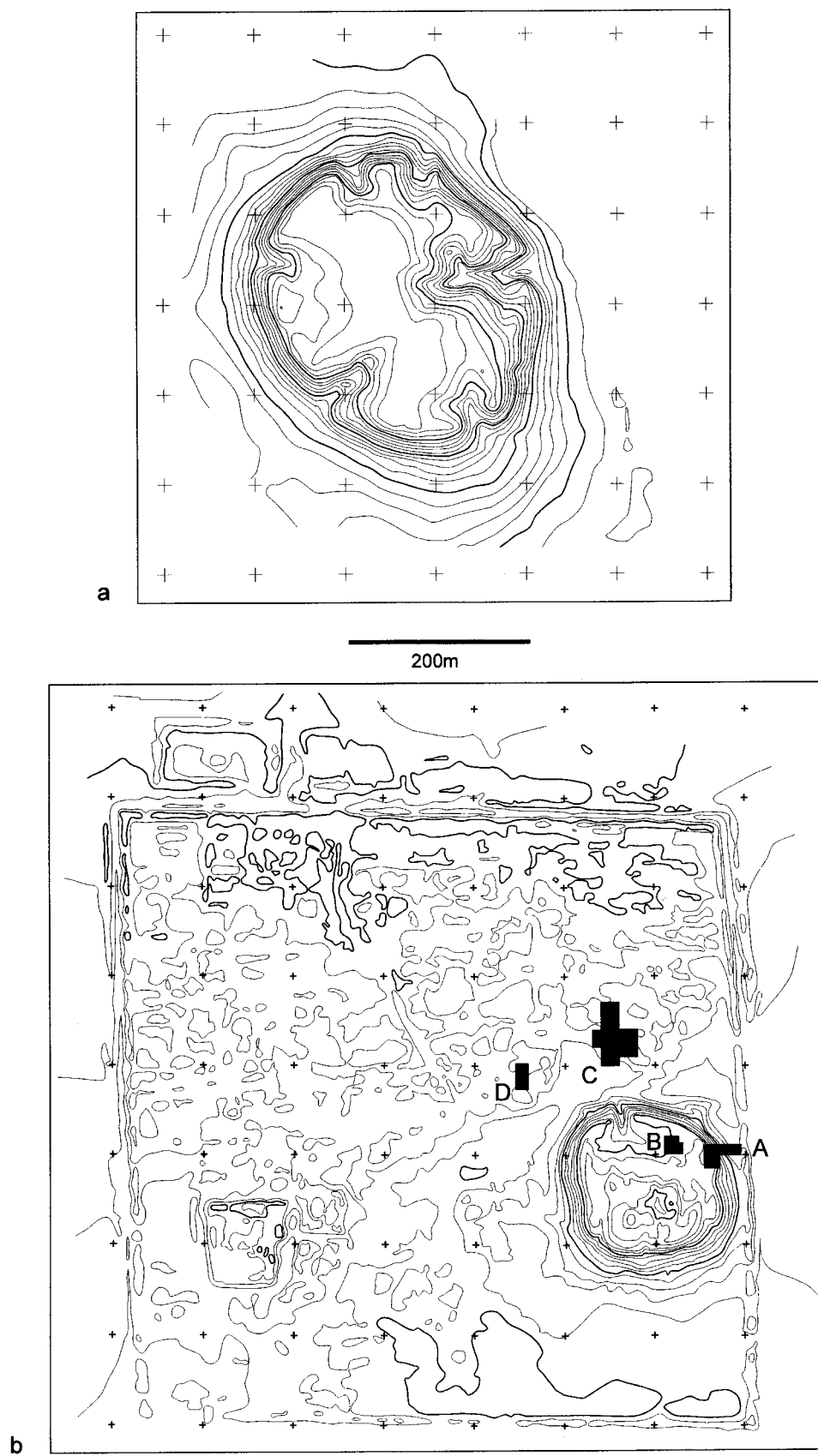


FIGURE 5. Contour maps of Tell Dehliz (a) and Kharab Sayyar (b)

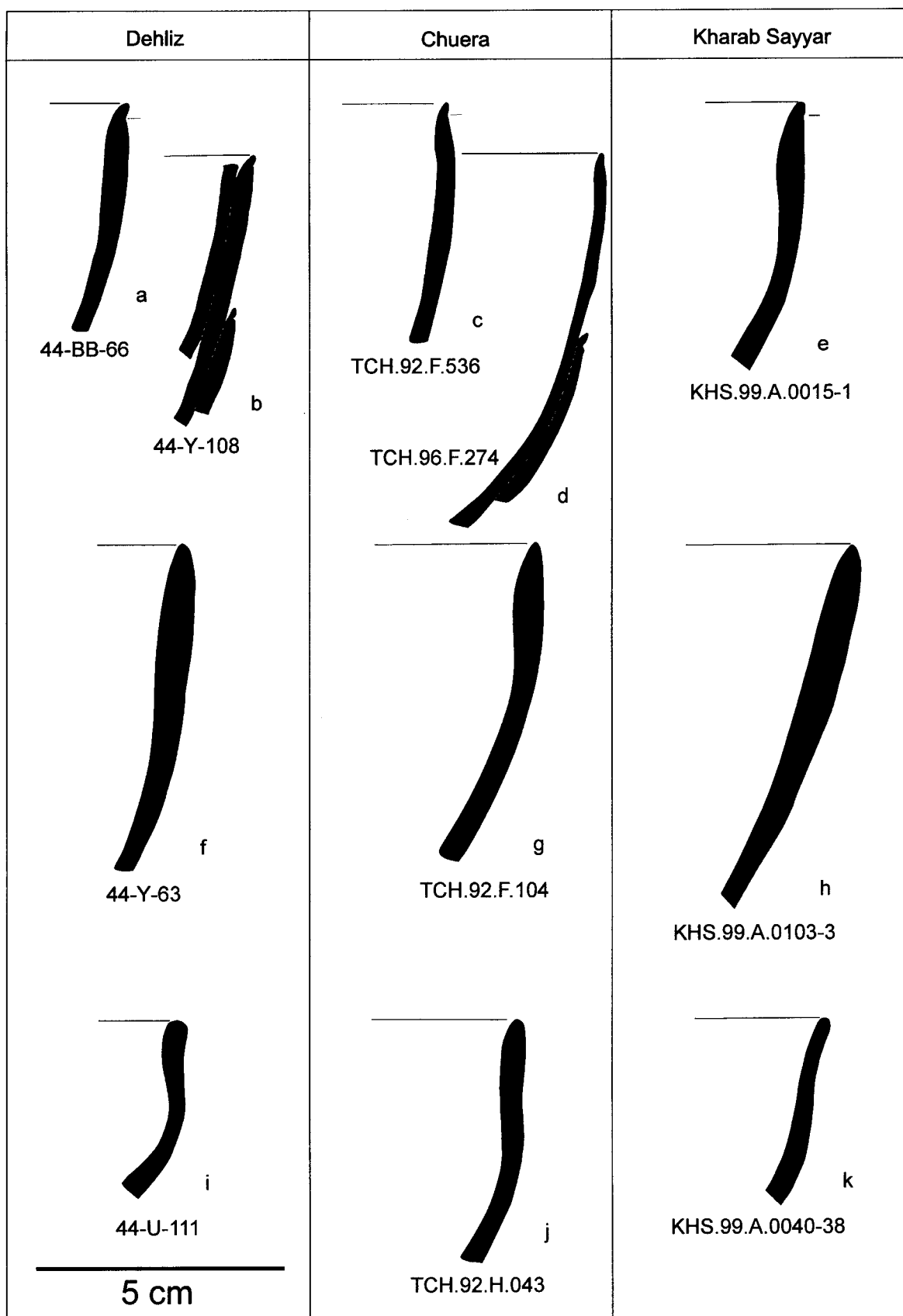


FIGURE 6. Pottery from Dehliz, Chuera and Kharab Sayyar: open shapes.

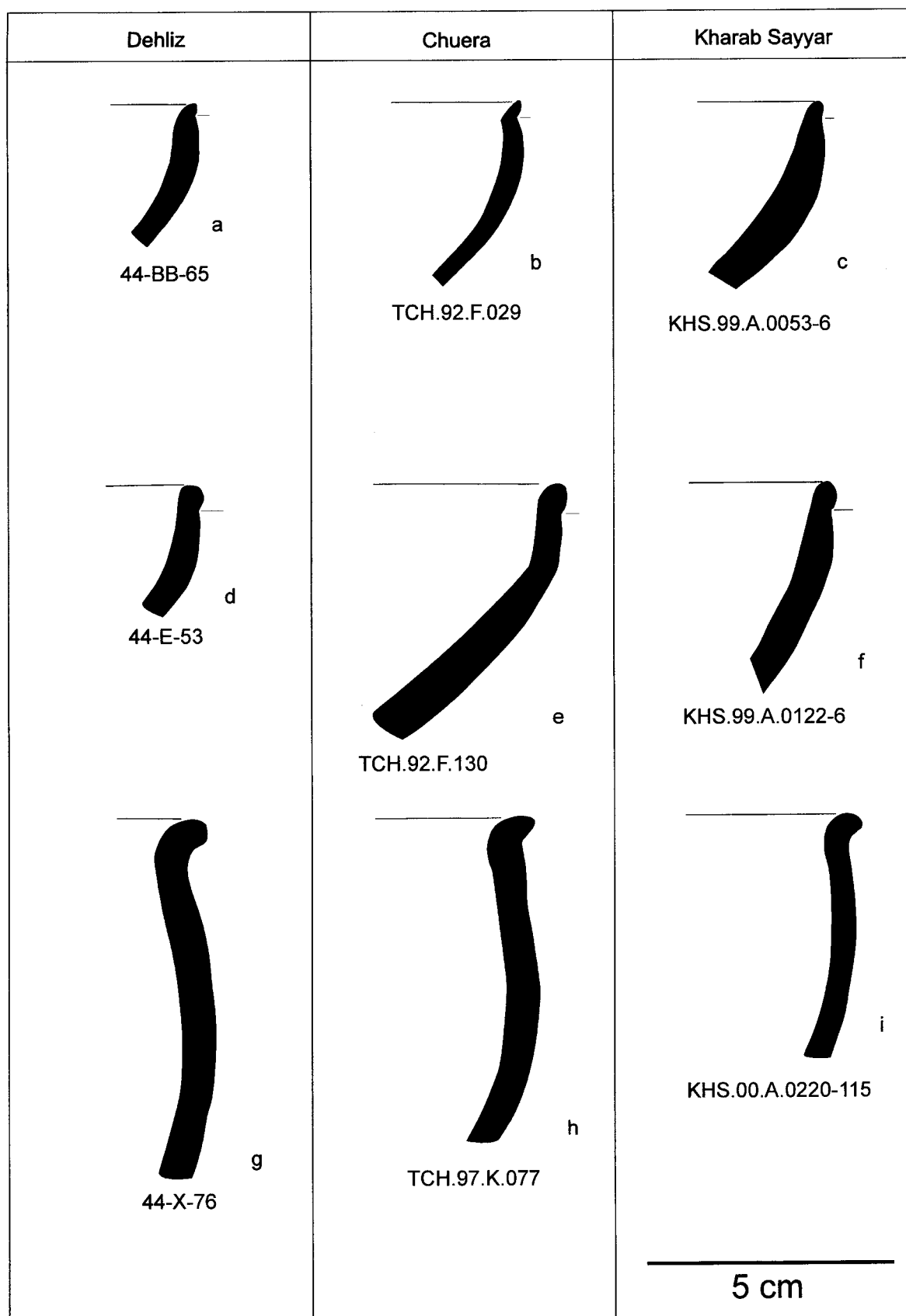


FIGURE 7. Pottery from Dehliz, Chuera and Kharab Sayyar: open shapes.

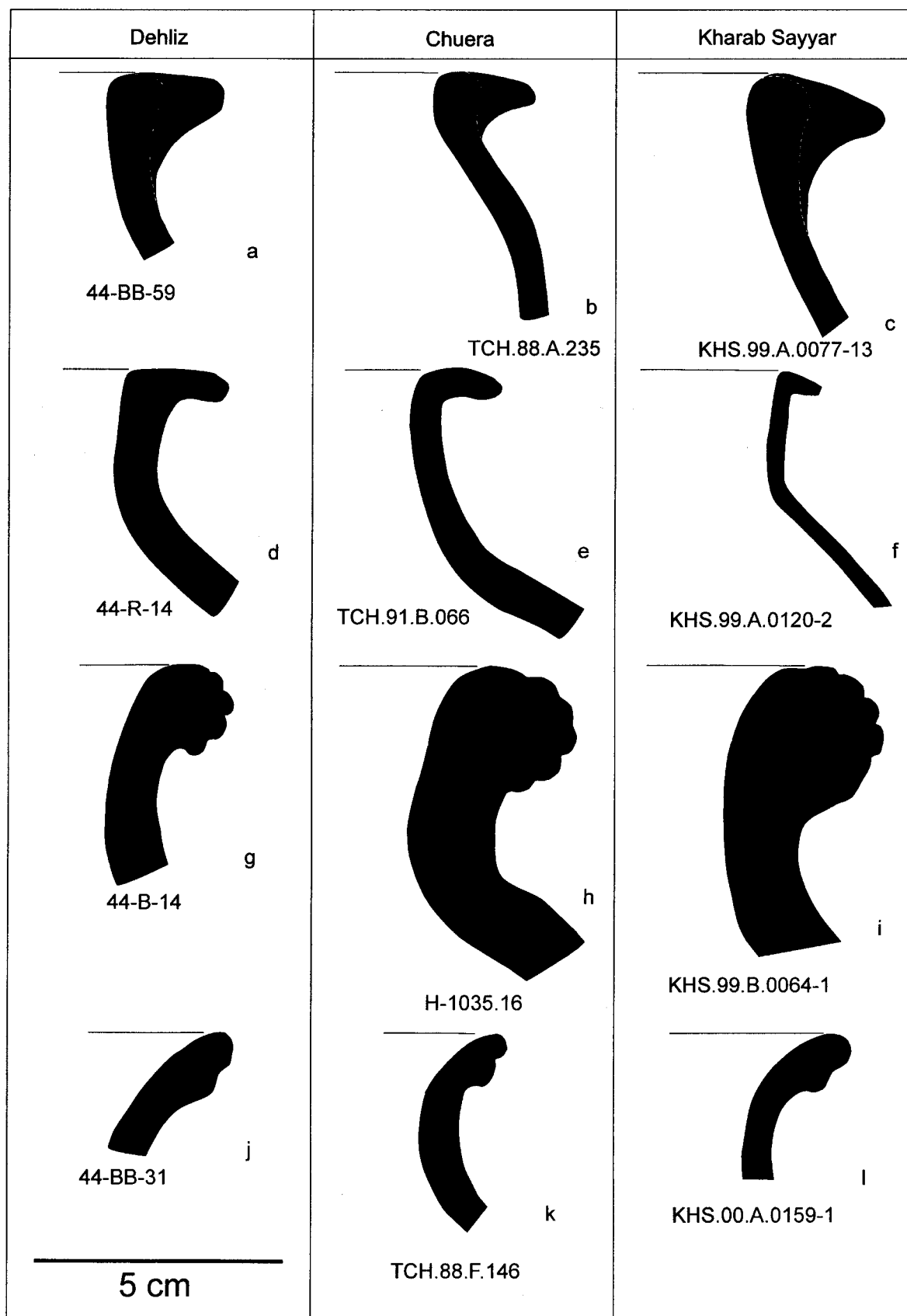


FIGURE 8. Pottery from Dehliz, Chuera and Kharab Sayyar: closed shapes.

Metallic ware occurs early in the sequences and has nearly disappeared in the end. Its frequency is up to 4% at Chuera and up to 2% at Kharab Sayyar. This difference may reflect the social differences between the population of an interregional centre (Chuera) and a larger village (Kharab Sayyar). But despite the different frequency the shapes of these fine wares are the same at all three sites (Fig. 8d–f).

The same holds true for the female terra-cotta figurines mentioned already. Several fragments from Kharab Sayyar match the Chuera examples and this peculiar type was found on the surface of virtually all 3rd millennium sites of the Wadi Hamar-Survey, including Dehliz (Fig. 4b).

Conclusion

The results of this cursoric overview are probably not very surprising. Geographical proximity is more important for the degree of similarity between two contemporary sites than similarities in the shape of the tell itself, as striking they may be. But this obvious result means that those scholars who deal with the most fascinating question of the origin of the “Kranzhügel” should keep in mind that these tells belong to different cultural units. These units may not only differ in their material culture, but also in their economic strategy. In other words: Though the author believes that the foundation of regularly shaped settlements on previously unsettled sites prove some common ideas of the respective founders, this was no main determining factor for the further development of these sites. If somebody dares to start working at Mu‘azzar or Malhat ed-Deru, he or she will find just another variety of the Early Jazirah Culture and no mirror of the Beydar or Chuera complexes.

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Estimating Ancient Settlement Size: A New Approach and Its Application to Survey Data from Tell Halula, North Syria

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Abstract

Archaeologists often use the term 'background noise' to describe the non-habitation-related artefact scatters which characterise large parts of the Near Eastern archaeological landscape. Electronic signal processing has devoted significant effort to separating meaningful information from background noise, and in this study the analogy has been extended to devise a method for estimating settlement size from survey data. The focus of this research is the site of Tell Halula in northern Syria. It was initially explored by the author using controlled sampling methods, and, more recently, has been the subject of excavations by the Universitat Autònoma de Barcelona. Close agreement between estimates of settlement size made on the basis of the Spanish excavations and those derived from the surface material using a noise estimate, suggest the method could have wider application.

Introduction

In the three and a half decades since the publication of Robert Adams' seminal *Land Behind Baghdad* (Adams 1965), Near Eastern archaeology has experienced a steady increase in the number of studies devoted to examining the development of ancient settlement patterns and systems from a regional perspective. The reasons for this development are not something I shall go into here, suffice it to say that it has been accompanied by a concomitant growth in awareness by archaeologists of the value of regional survey as an investigative technique in its own right. In all such studies, whether aimed at investigating settlement patterns and land use, for example, or changes in the structure of political and economic relationships, one determinant is paramount—that of settlement size. By itself settlement size can be used to determine the structure and spatial organisation of settlement hierarchies, or, when transformed into population estimates and potential agricultural sustaining areas, to determine the degree of economic and political interaction between settlements.

Exactly how one goes about estimating settlement size, however, is not as straightforward a matter as it may seem. Given the evident importance of settlement size as a basis for more sophisticated analyses, one might expect to find reference in the literature to various means of calculating settlement size, or at least some discussion of the processes involved in arriving at such a measure. While a number of scholars have highlighted the importance of accurate estimates of settlement size for the types of studies they are conducting, and the fact

that this can be difficult to achieve (e.g., Johnson 1975: 292–293; Adams 1981: 50; Akkermans 1990: 140), very few have sought to ensure that the methods they use actually address, or compensate for, the types of problems they identify.

There is also the matter of what exactly it is we are trying to measure. Are we attempting to define the original extent of occupation, that is, the area inhabited before a settlement was finally abandoned, or are we simply attempting to define what is left of that settlement? In most regional studies there seems to be an unwritten assumption that ‘settlement size’ refers to the area of the original settlement, yet where excavations have made possible an estimate of the extent of settlement, the stated dimensions are usually those of what remains. While there may be a close relationship between the area of the preserved remains and the original area of the settlement, it is important to remember that post-depositional factors will have operated, and to make the appropriate allowances.

Of course it could be argued that, given the varied environments in which archaeological sites occur, there can be no absolute means of estimating settlement size from surface data. What of deflated sites, for example, or those where there is a likelihood of earlier levels being buried under metres of alluvium? In all probability, the question of how to determine settlement size is one for which there is no ideal solution. Perhaps it is best to acknowledge that the most we will ever be able to determine is the minimum extent of occupation. Nevertheless, the issue is so important that I do not believe the potential for an equivocal outcome should be a deterrent to its further consideration. To paraphrase Robert Adams words (1981: 47): archaeological investigation should not be viewed “as a pristine discovery of certainty but as a cumulative, unfolding process in which the testing of hypotheses and the search for new data are closely linked. Very few findings of any kind are immutable and decisive.” The increased emphasis on regional studies suggests the time is fast approaching when we will be forced to tackle head-on the problem of how to accurately determine settlement size.

My own need to confront this issue developed from a surface collection I conducted some years ago at the site of Tell Halula in northern Syria. In seeking to establish settlement sizes for the various occupations, I found the literature to be uncharacteristically silent on the means of going about this. Whereas the shortcomings of other research methodologies or analytical techniques are often addressed at length, estimation of settlement size is seldom mentioned, and only rarely is it acknowledged that the one measure on which so much else depends may contain inherent weaknesses. The absence of any clear or consistent means of estimating settlement size has consequently led me to devise a method for arriving at such a measure which, in the case of my own research, has produced very promising results. This is not to say that it is applicable to all sites in all situations, however, the close agreement between the estimates made using this measure and those based on a series of soundings and subsequent excavations at the site by the Universitat Autònoma de Barcelona, suggests that it is worth testing elsewhere.

Background

A major assumption underlying all archaeological survey is that surface artefacts and their patterns of distribution are in some way representative of what lies buried beneath the soil. Ideally, then, we might expect that any means of estimating settlement size would reflect and be responsive to the actual surface artefact densities. The reality, however, is

that the majority of methods have no quantitative basis and are invariably of an arbitrary, subjective nature.

One of the most frequently used methods of estimating settlement size is to equate it with site size (cf. Adams 1981: 50). While this approach is being slowly abandoned as survey methodologies become more rigorous, where analyses have been undertaken that incorporate material from earlier surveys (e.g., Lupton 1996), overall site dimensions are often the only size indicator available for the archaeologist to work with. A major pitfall of equating settlement size with site size is that it almost always leads to overestimation of the area occupied, and consequently of derived measures such as population size and density (Ammerman 1981: 77). This is because only part of the area covered by a site is likely to have been occupied at any one time, and also because the on-going processes of weathering and erosion mean that many ancient mounds are now much larger at their base than they would have been at any single stage in their occupation.

Another means of estimating settlement size, and probably the most often used by Near Eastern archaeologists, (e.g., Johnson 1973: 26; Algaze 1989: 243; Akkermans 1990: 141; Algaze et al. 1994: 3), relies on collection methods which, unfortunately, tend to lack sufficient spatial controls. The fact that the collection areas are often delimited arbitrarily and rarely adequately recorded, means that it is impossible to quantify the results, and consequently, the resultant settlement size estimates can only be considered very rough approximations.

The most effective way of tackling the problem of how to determine settlement size is through the use of controlled surface collection. Because the collection units in these circumstances are of known size and location, the data can be used to map the distribution and patterning of diagnostic artefact types, which in turn allows one to estimate the extent of a site at different stages in its occupation history. However, even when collections have been made by such rigorous means, there seems to be little consensus as to how one goes about estimating settlement size.

In some cases it is assumed that the total area over which artefacts from a particular occupation phase are distributed is indicative of the extent of settlement during that period (e.g., Stein and Wattenmaker 1990: 12). Yet, given the complexity of the cultural and natural processes that are likely to have contributed to the subsequent dispersal of those artefacts, the probability that the original distributions have not been distorted to some extent seems exceedingly slight.

Some archaeologists have consequently sought to compensate for the effects of post-depositional processes by interpreting the artefact density level at which they believe the 'noise' produced by these factors ends and occupation deposits begin (e.g., Whallon 1979: 161 ff.). Although this results in a more valid estimate of settlement size because it allows the archaeologist to introduce observations about the physical structure of the site and even anecdotal information which might be relevant, the decision as to what constitutes a significant level of artefact density is still very much an arbitrary one. Why the cut-off point for one occupation period should be a density of five artefacts per collection unit, whereas for another it might be 20 artefacts per collection unit, is rarely apparent. Clearly, then, there is a need for more objective grounds for estimating settlement size.

Methodology

Because the whole purpose of identifying a significant artefact density level is to separate signs of habitation from the surrounding 'noise', I decided to look for an answer to the

dilemma of areal estimation in the notion of 'noise' itself. In Near Eastern archaeology, the term 'background noise' is used to describe both the extensive surface artefact scatters occurring adjacent to many mounded sites, and those on-site artefacts which have arrived in their present position as a result of random post-depositional processes. In its original milieu of radio and electronic engineering, noise is the unwanted signal that is always present in a communication system (Connor 1982: 1). Transferred to archaeology it refers to artefact occurrences that are not directly related to occupation and may therefore blur the edges of, or mask, the actual zone of habitation.

Drawing on this analogy, I turned to the field of electronic signal processing in search of a mechanism which might help to eliminate the 'background noise' resulting from the effects of post-depositional processes. Although direct borrowings from other disciplines tend to be of limited value because the underlying assumptions and principles are often inconsistent with the general nature of archaeological data, I considered the lack of a specifically archaeological solution to this problem to be sufficient reason to explore whatever techniques were available. As it is, electronic signal processing offers a number of techniques for eliminating background noise, but most tend to apply to specific types of noise. The resultant method for estimating settlement size is consequently a direct adaptation of a rule of thumb used by electronic engineers to estimate the level of noise in a particular signal (Coulon 1986: 545). This is expressed by the equation 'noise = v_{signal} ', or 'noise = \sqrt{n} ', 'n' in this case being the highest artefact density for the particular period in question, i.e., the original 'signal'. (Noise generation is a random process that follows Poisson statistics, for which the standard deviation equals the square root of the mean, i.e., $\sigma = \sqrt{n} = \text{noise}$, while the signal = \bar{n} .) The justification for using this value rather than any other is the assumption underlying all surface survey: that high artefact densities correlate strongly with areas of subsurface habitation and that low artefact densities do not. Of course, very high densities may refer to refuse areas such as dumps or middens, while unusually low densities could indicate areas covered over by later deposition. This is the point at which interpretation has the ultimate role to play, since in electronic terms these are 'distortions' of the signal rather than 'background noise', and, like other distorting factors such as those which influence the direction of movement, cannot be compensated for by adjusting the signal-to-noise ratio.

Results

Tell Halula is located on the western edge of the Euphrates valley in northern Syria, just outside the floodzone of the new Tishrin Dam (Fig. 1). Excavations carried out at the site since 1991 have so far revealed an unbroken sequence of occupation lasting from the Middle Pre-Pottery Neolithic B through until the end of the Halaf period, followed by an occupation dating to the Late Ubaid. Analysis of the surface collection has expanded this sequence to include occupations of the Late Chalcolithic, the Late Uruk, the early to middle Early Bronze Age, and the Middle to Late Bronze Age. Although the final occupation of the tell appears to have been during the Late Iron Age, the site presumably continued to function as farmland for an adjacent Late Roman, Byzantine, and Early Islamic settlement, and later for the modern village.

Figure 2 shows the area covered by the 1986 surface collection of Tell Halula and the location of the collection units. It was generated using Golden Software's Surfer® 3-D mapping program which has also been used to produce artefact density contour maps and area estimates for each of the periods of occupation.¹ In these figures the density contour maps

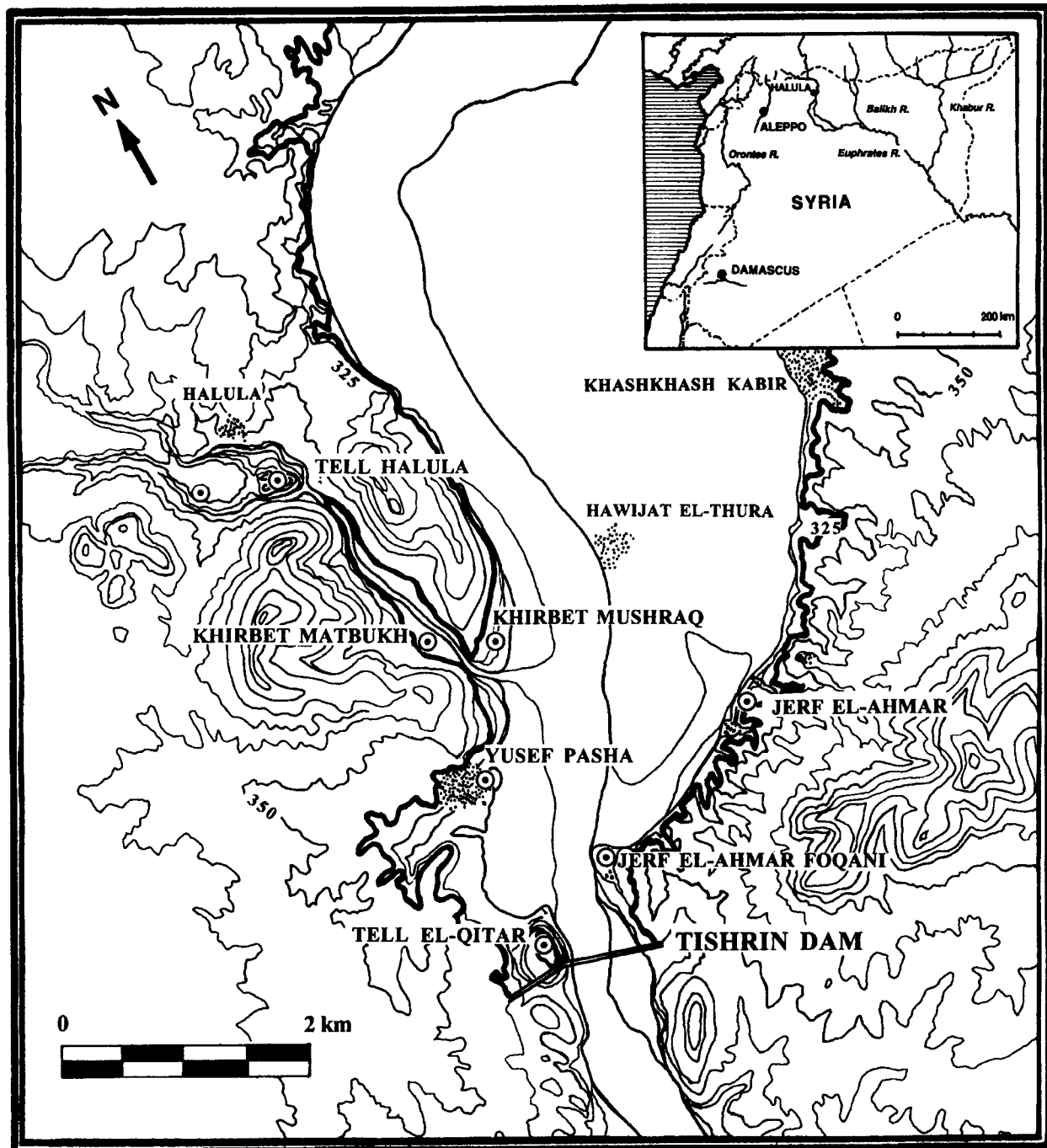


FIGURE 1. Map of the lower Tishrin Basin. Archaeological sites are marked with a bullet (⊙).

have been overlaid on a shaded relief map in order to show how the respective distributions relate to the site topography.

The clearest example of how the noise estimate operates is with regard to the Halaf period. This is probably because the Halaf occupation appears neither to have been greatly obscured by later habitation levels nor affected by massive disturbance. The density map

1. I am indebted to Mr. David Menere for his assistance in generating the Surfer® maps.

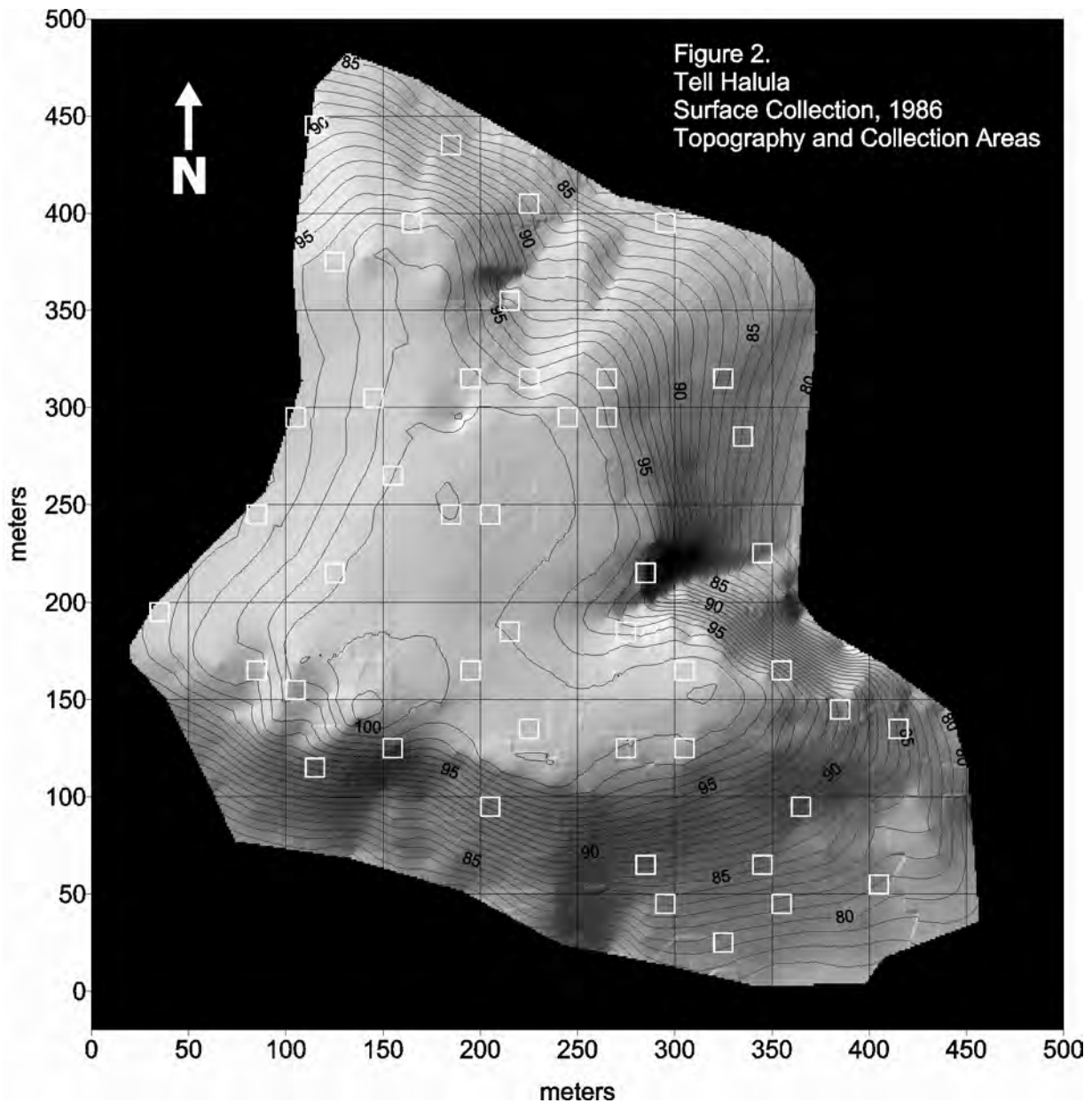


FIGURE 2. Tell Halula Surface Collection, 1986: Topography and Collection Areas.

for this period (Fig. 3) shows Halaf pottery occurring virtually to the edge of the sampling area, and even beyond it to the west, where, because the land was under cultivation, we were unable to collect. Yet it is highly unlikely that the Halaf settlement covered such a large area, quite simply because the profile of the tell, with its long, shallow slopes, implies that at least part of this distribution can be attributed to longterm erosion (Rosen 1986: 31–46). How, then, do we establish the probable extent of the Halaf settlement?

A glance at the density contours and their relationship to the topography suggests a density of around 30 artefacts per collection unit as an appropriate level from which to calculate settlement size, as this coincides more or less with the brow of the slope. But the problem here is that the limit is chosen arbitrarily, even though it intuitively rejects areas most likely to have been affected by erosion. We could instead have chosen a density level of

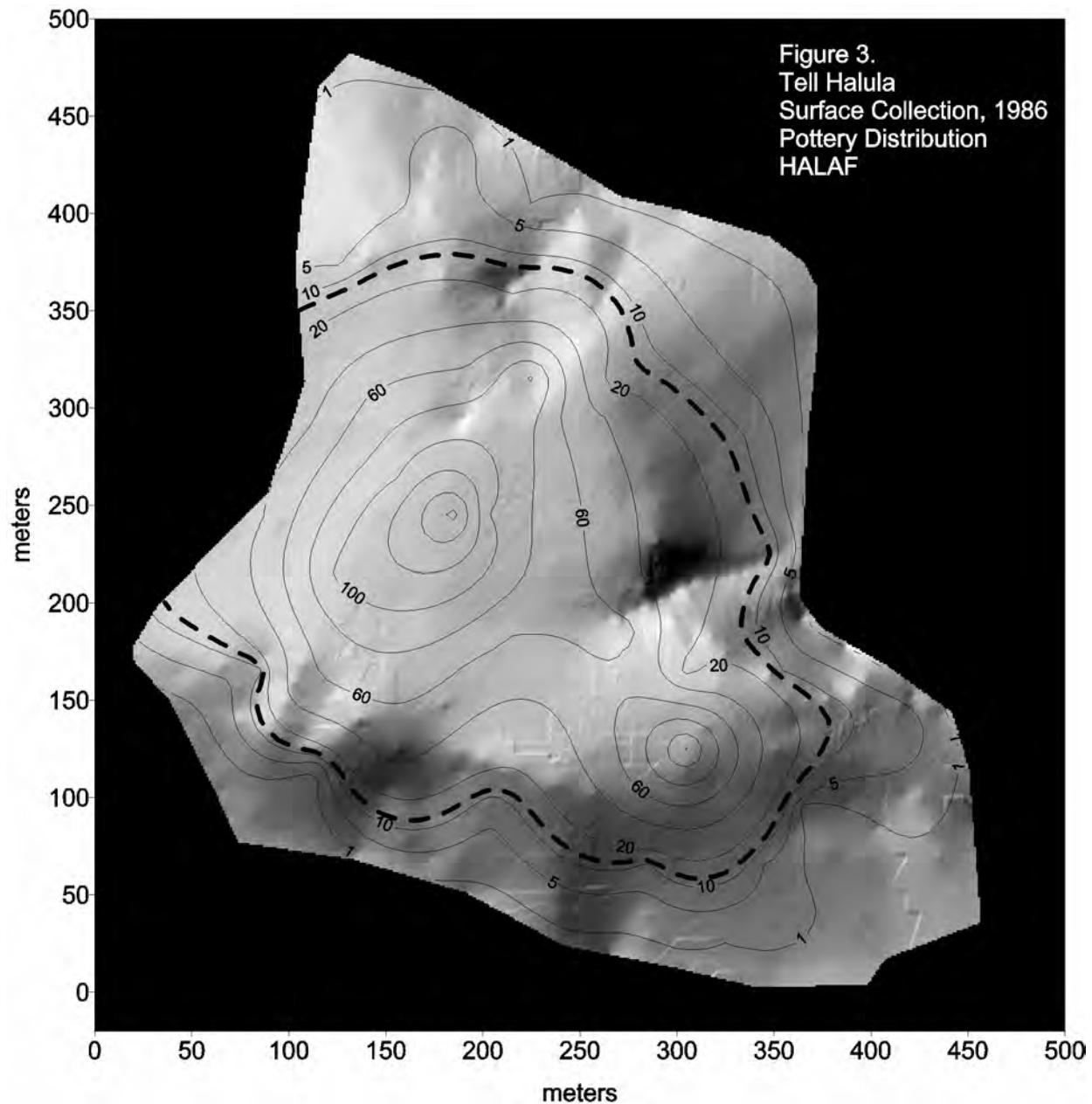


FIGURE 3. Tell Halula Surface Collection, 1986: Pottery Distribution—Halaf.

around 18 artefacts, as comparison with the distribution maps for the other occupation periods indicates that the sharp indent in the 20 contour just to the south of the eastern gully is where Halaf levels are covered over by later deposits, and therefore probably intact. Depending on where we choose to set the level, the area could vary by at least 1.5 hectares.

The noise estimate eliminates the difficulties of arbitrary decision-making by excluding 'background noise', thereby setting an absolute limit on the extent of settlement. The resultant area can then be interpreted in the same way as usual by drawing on information about the site's present-day topography. In the case of the Halaf period, the limit can be set at a density of 12.88 artefacts per collection unit, that is, the square root of the highest artefact density, or 166 diagnostic sherds for Square 24/4. On Figure 3 this level is shown as a dashed

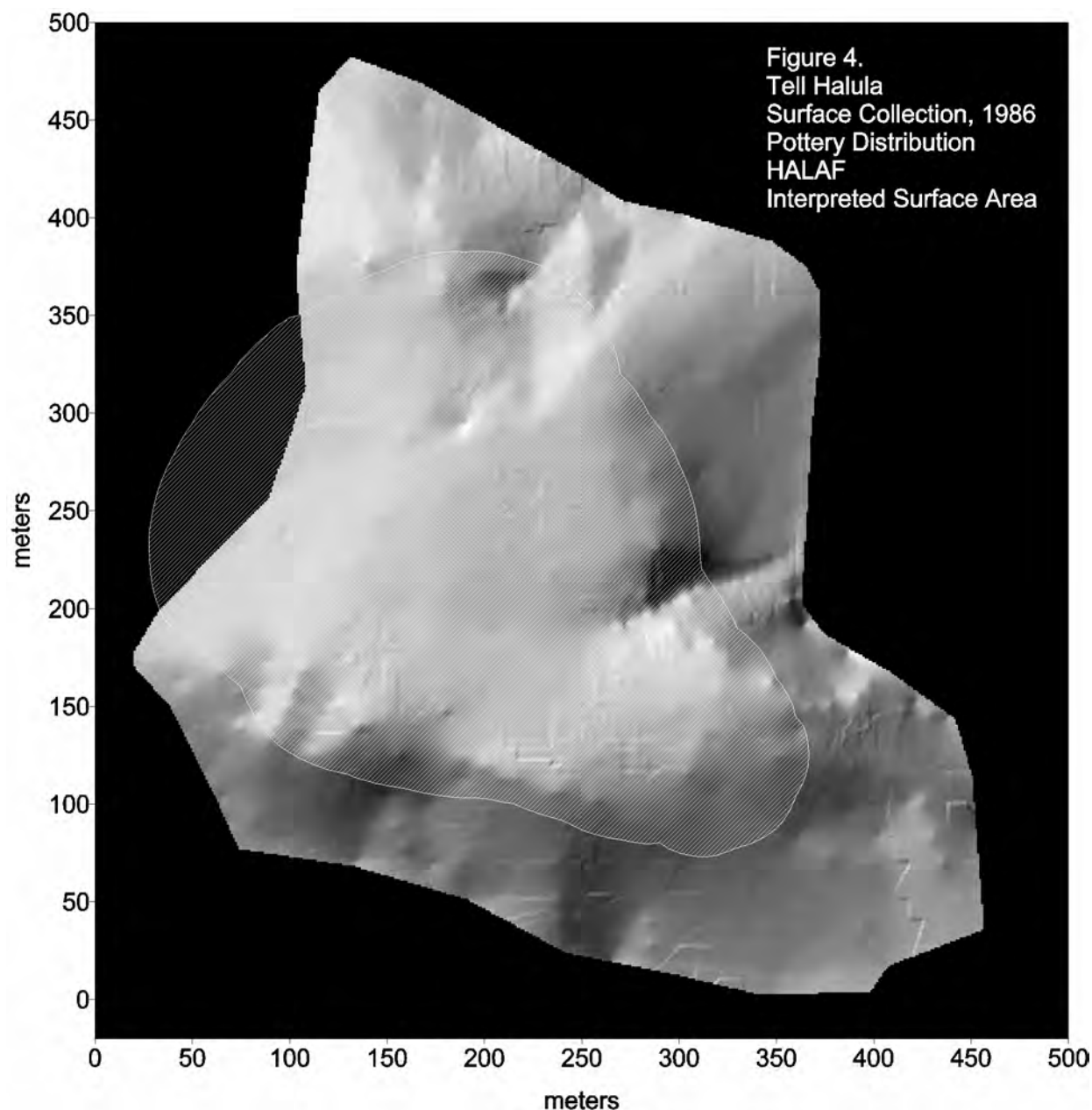


FIGURE 4. Tell Halula Surface Collection, 1986: Interpreted Surface Area of Halaf Settlement.

line. It encompasses an area of 7.45 ha, including an extrapolated tract to the west of the sampling frame.

If we examine this area and how it relates to the site's topography it is apparent that there has been substantial, but fairly regular, movement of artefacts down into the eastern gully and onto the adjoining slopes to the north. Movement has not been as pronounced to the south of the gully where Halaf levels are probably less disturbed, however, erosion does appear to have moved artefacts out along the eastern spur of the site, and down the south-eastern slopes. At a point along the western reaches of the southern slopes, the convexity in the density contours has clearly been produced by slumping or collapse of the occupation deposits.

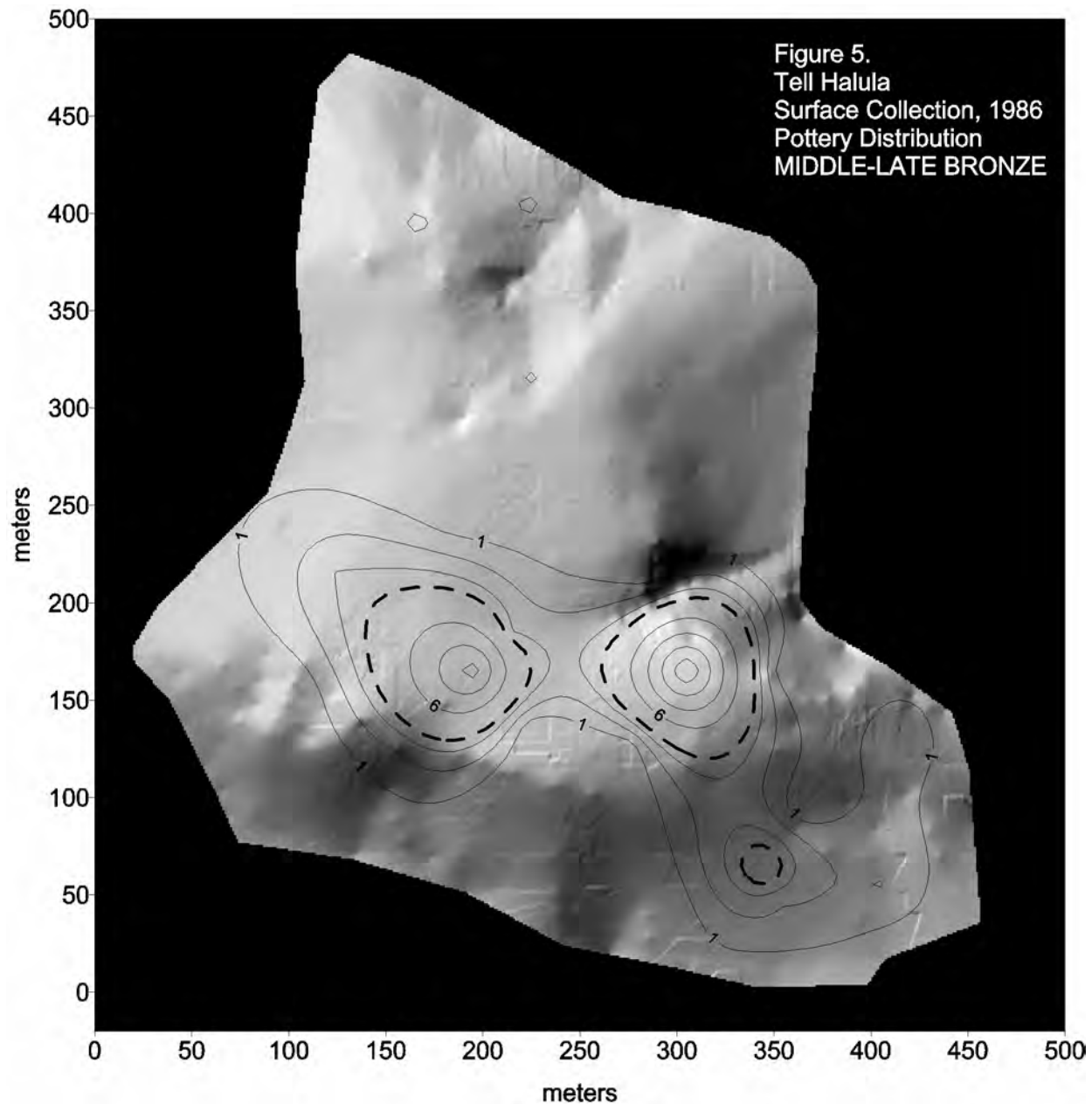


FIGURE 5. Tell Halula Surface Collection, 1986: Pottery Distribution—Middle-Late Bronze.

On this basis we can probably redraw the limits of occupation as indicated in Figure 4. This results in an area of approximately 6.94 ha which is 1.4 ha in excess of the estimate suggested by the Spanish soundings (Alcalde and Molist 1996: 47). Such a discrepancy probably arises because the Spanish calculations appear to exclude the northeastern sector of the tell where they formerly reported the existence of Middle Halaf levels (Alcalde and Molist 1996: 47), as well as part of the eastern spur which has not yet been sounded. The Spanish estimate also reflects the extent of settlement as preserved today, whereas the estimate produced by the present study is for the total area occupied.

A very different example of the application of the noise estimate is in relation to the Middle and Late Bronze Age settlement. In this case (Fig. 5) pottery is distributed in a broad

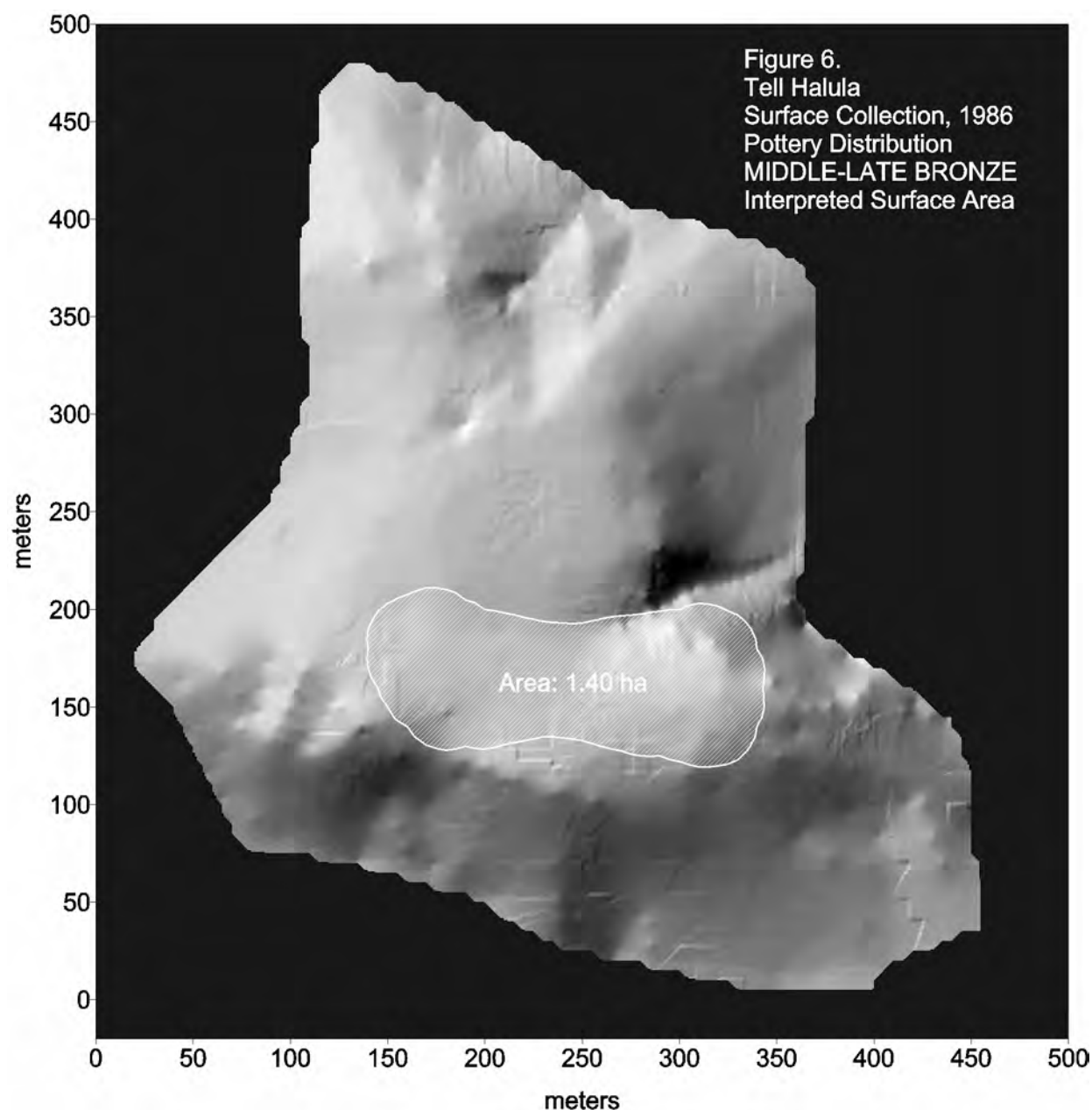


FIGURE 6. Tell Halula Surface Collection, 1986: Interpreted Surface Area of Middle-Late Bronze Settlement.

band extending across the southern part of the site, but with a pronounced tail where artefacts have evidently eroded down the southeastern slope to settle at the base of the tell. Whether this was as a result of cultural or natural agencies, or a combination of both, is unclear. Nevertheless, the same or similar forces have also caused artefactual materials to erode down onto the northern slopes of the eastern spur and into the gully. Downward movement has also occurred over the area along the southern slopes where Halaf and earlier levels are believed to have subsided, and single artefacts have even turned up on the northernmost slopes of the site, implying considerable disturbance.

By applying the noise estimate to the distribution of Middle and Late Bronze pottery, the area obtained is approximately 1.15 ha. This is spread over three peaks, including one consisting of displaced deposits at the base of the tell. Such an arrangement seems more indicative of a remnant deposit than of settlement structure, leading one to infer that the area refers to the extent of preserved remains rather than to the extent of the original settlement. To determine the actual area occupied would consequently involve ‘replacing’ some of the eroded deposits, a feat which can be achieved in Surfer® by linking the two main peaks (Fig. 6). This results in a area of 1.4 ha which lies well within the size range for other small Middle to Late Bronze Age sites in the Tishrin Basin, such as Qara Quzaq (c. 2.25 ha), Shiyukh Tahtani (c. 0.8 ha for the upper tell); Shioukh Faouqani (c. 1.8 ha), and Tell Khamis (c. 1 ha) (Valdés Pereiro 1999: 117; Falsone 1999; Bachelot 1999: 143; Matilla Séiquer 1999).²

Conclusion

In this paper it has only been possible to give a brief overview of the noise estimate method of determining settlement size. However, I can report that the results obtained from its application to the other occupation periods on Tell Halula are similarly encouraging. Like many other archaeological methods, the noise estimate does not necessarily provide all the answers, and further testing is definitely needed to determine the full extent of its predictive capability. Nevertheless, the significance of this measure lies in the fact that the results are reproducible, unlike methods based on qualitative assumptions about the significance of different levels of artefact density. It therefore provides an objective basis for subsequent interpretation. The essential difference is that it moves the more subjective stages of the analysis from the beginning of the process to a later stage.

To sum up: with increasingly sophisticated analyses of ancient Near Eastern cultural and settlement systems, accurate estimation of settlement size has become a fundamental issue. Unfortunately, this has not been assisted by constructive discussion of the issue, or by the development and testing of improved estimation techniques. What is needed is a means to separate the subjective and objective aspects of settlement size estimation so that it is clear where the analysis of field data ends and the interpretation begins. Post-depositional processes are complex and their interaction is probably very site-specific. Rather than pursuing these in their full complexity, simple objective measures that are readily understood may be the most productive approach.

2. Where dimensions are not available, settlement area has been determined by measuring off published maps of the sites.

The work I have described at Tell Halula provides a basis for re-opening this discussion. Clearly, a rigorous approach to the control of surface collections is a necessary foundation to provide quality data for subsequent analysis, but when good data are available, the signal-to-noise analogy has produced sufficiently encouraging results to justify further testing.

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Planning Activity in Ancient Mesopotamia, Some Questions and Hypotheses*

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Abstract

This research follows on the previous results presented at the I ICAANE, Rome 1998, where some main questions were discussed, but only partially clarified, and some hypotheses were suggested in order to define the planning activity on clay tablets. The actual analysis has shown that the category of “building plans” is not adequately supported by those data available to consider it as an accomplished building activity. For this reason the paper will be presented in two parts: the first one deals with the idea of space and its measurements as reflected in the activity drawing of building plans and with the recent analysis carried on by other scholars on real houses-layouts.

We try to formulate a clearer picture of the building plans activity; this reveals various purposes for these specialized handicrafts and confirms their use as wider than simply catastral and school ones. The second part will try to investigate in more detail the purposes this kind of clay tablets were made for.

In order to achieve this we will consider several factors as: which kind of drawings were represented; peculiarity of data inscribed Presence and/or absence of characterising signs; use of measures when available Compatibility with architectural design; geometrical technique used to draw.

Part 1

Rita Dolce

This research deals with one small part of the handicrafts that archaeologists do not consider because of their primary use: inscription. I am referring to clay tablets. In a certain number of cases at least one of the sides of the tablets will inevitably bear an architectural drawing. There are therefore very good reasons for taking an interest in these latter types. It should be made clear from the outset that unlike what one might expect—and however much it would help to solve the underlying problem—the inscription that is often on the other side of the tablets bears no relation to the drawing in the absolute majority of the cases known so far.¹

It should also be borne in mind that the analysis of the data and the identification of the problems that we will be trying to carry out in this paper are based on the very first phase

1. Except two tablets: the first one from Girsu dating to the Akkad Period with a Naram-Sin inscription (Louvre AOT b.355 + 355bis); the second one from Sippar with Abi-Esuh inscription, dating to the Old Babylonian Period (British Museum BM.8634); see Thureau-Dangin 1898a: 24, note 147 and 1903: 66, note 147; King 1900: 242–245, Tav.XVIII,107; cf. Dolce 2000: 10–11, 14–15, Figs. 2, 10.

of the research, whose results were presented at the 1st ICAANE² in Rome. We shall then try to organize all the elements that make the type/types and the use/uses of these drawings comprehensible, ranking them in order of their importance according to the study of this class of items.

This analysis has naturally focused on the research environments which have emerged in the past few years, all of which investigate the conception of space, constructed or delimited, and the measurement of space in terms of both a theoretical rationale and a concrete procedure belonging to the cultures of the ancient Near East.³

For these studies form the basis of the modulated evaluation of the “marks” set out in each layout and in the later global focusing on the entity, as a value, and the specificity, as a function or functions, of this class of objects. One assumption that might prove enlightening in my opinion is the one pointed out by Winter⁴ that “the Mesopotamian conception is predicated upon linear, one-dimensional manipulations of space” without wishing to deny the presence of volumes and tridimensionality, but rather to establish the fact—and I quote again—“that at any given moment in history a single mode of perception, or dimensional frame, seems to dominate the conceptual base from which actual buildings were constructed”. If the dominant concept of space matches what has been proposed here⁵ it is expressed in a linear and surface extension.⁶

The implications for the clay tablet drawings of this interpretation of the concept of space in ancient Mesopotamia are particularly important so that we can set about trying to understand them: for while many of the tablets exhibit features that are inherent in a targeted graphical activity (in other words, with a clearly defined purpose) such as the procedure of having a preliminary drawing and then variations regarding the siting of the entrances, and hence the internal circulation which I would here just like to mention in passing⁷ (Figs.1, 2), they nevertheless present all the indications of measurement that are developed only on a horizontal plane and not elevations. Apart from the Ziqqurat layout, perhaps from Babylon;⁸ they give no indications of air inlets or light sources. And in some cases they have indications regarding the staircases. The drawing of architectural plans on clay tablets that have been discovered so far do not, in other words, possess the indispensable features for them to be classified as ‘architectural projects’, in any real sense, which require a ground plan, a prospect and a section so that the graphic idea can be practically implemented.

From all the evidence so far collected, the idea of projection is still lacking. We are therefore faced with a graphic activity which, from the evidence, is based on a different concept of a ground plan, linked to the layout in terms of a flat extension, and therefore intended for a different use from reliable and accurate scale drawing a building to be constructed.⁹

2. Dolce 2000.

3. Regarding the first level of analysis I refer specifically to Winter 1991, Margueron 1984, and Castel 1991; regarding the second level see already Leemans 1951, Powell 1995, 1976–77, and Kubba 1998. Indeed the high degree of knowledge of mathematics and means of computation has been pointed out by many recent researches concerning both the theoretical and practical field, see below note 39.

4. Winter 1991: 60.

5. Winter 1991: 67.

6. See again Winter 1991: 68, where she rightly emphasizes that her interpretation is not reductive but explanatory, and supports the supreme idea of the order of the cosmos precisely through effective systems of control space.

At this point we might say that the layouts of buildings were drawn on clay tablets for reasons—which we shall be examining very shortly—other than to be used as instrument appropriate to an architectural drawing in the technical sense of the term. This drawing activity does not therefore give the product, namely the plan on the clay tablet, the dignity of an architectural project as the immediate basis for construction.

But the plans and drawings on clay tables not only provide “negative” evidence, if it may be so expressed, but also a set of data that we have examined in order to answer a large number of unanswered questions, as well as new questions that emerged during the course of our previous survey.

With regard to the preparatory drawings, in addition to the preliminary sketches visible on the plans that I have already noted elsewhere¹⁰ and which are referred to here, I will now examine the overall drawing procedure.

It has recently been pointed out¹¹ that constructions standing on an earth base from the Late Chalcolithic period onwards were built from the outside to the inside, following an empirical method that had to take account of a “given space”. This therefore meant that the space had to be properly organized, and hence programmed, whether it was for a public building or for a private dwelling. This way of proceeding can, in my opinion, also be identified on the clay tablet drawings from the preliminary grid used as the basis for the complete drawing (Figs. 3, 4, 5, 6). If this assumption is correct, Kubba’s view is probably right.¹² Kubba says that in this Chalcolithic period a radical change was beginning in the idea and practice of architecture because of a preestablished ratio underlying the construction of a building based on one single overall idea. Although we cannot possibly talk about architectural projects as far back as the Chalcolithic Period, an important distinction now opens up before us: a distinction between building construction and planning a building, which is the closest step to architecture in the full sense of the term. This would therefore confirm the

7. Dolce 2000: 5, 10, 15–16, notes 22–23, Figs. 1, 11; for the second plan from Girsu see below note 14. Two other examples on Figs. 1, 2 are a plan from Babylon dated to Late Babylonian Period (British Museum BM.46740) which bears on the obverse a lexical text, and a plan of unknown provenience, dated to the Middle Babylonian Period (Iraq Museum IM.44036,1).

Fig.1: Fragment of a tablet from Babylon. London. British Museum, BM.46740.

Plan of a building, showing many entrances in a so little extension (the fragment is 5.2 cm high and 6 cm wide), the perimeter of the plan is clearly outlined by a double line. The scantiness of the fragment does not allow us to define the type of plan even if it corresponds most probably to a large house. The comparison suggested by Wiseman of this plan with the more complete one from Babylonia (BM.80083), quoted below, Figs. 3, 5, and the consideration of the text on the other side of the tablet as a work of a young scribe could show that it is a cadastral plan (Wiseman 1972: 145, Fig. 3).

Fig.2: Fragment of a tablet of unknown provenience. Baghdad. Iraq Museum, IM.44036.

Whole plan of a building drawn with more accuracy than the previous one (Fig. 1) even if showing two corrections (on the top) and probably a proposal of further entrance (on the left, bottom); the layout is clear, referring to a house with courtyard in the middle as a “corte di distribuzione” for inner circulation, according to the placement of the entrances. Noteworthy, is the absence of any indication of the gate from outside to inside the building. The proposal of H. Schmid (1985: 291) to compare this plan with the layouts of some houses at Nippur dating from Ur III Period and with those at Ur itself dating from the Isin-Larsa Period points out to the same direction as the recent hypotheses of Margueron 1996 and Zettler 1992, see Dolce 2000: 4. Nevertheless it seems doubtful to identify the main room back to the courtyard as “a funerary chapel”, according to the interpretations of the function of the rooms in the actual building just quoted. Schmid 1985: 289–292, Fig. p. 289.

opinion that we have expressed elsewhere, that as far as the clay tablet layouts are concerned there is a subtle but real distinction between two categories: one speculative and one practical, each of which relate to a different human activity, but both of which were probably performed originally by a single individual with multiple roles.¹³

The layout drawings on the clay tablets in many cases, as we know, also indicate measurements (Figs. 7, 8, 9), even though there is often some dispute and uncertainty as to their reading,¹⁴ both with regard to any predetermined units of measurement and the “spaces” to which they refer—the thickness of the walls or the extension of the rooms and the internal areas for the paths followed by people inside them. Although the measurements indicated on the drawings cannot always be calculated by reference to any one single unit, and hence cannot refer to one single and objective system that we can recognize,¹⁵ the fact that the measurements reoccur is certain evidence that the use of these architectural plans also made it necessary to have measurements, expressed in a “common language” known to the people who would subsequently use them, probably an abbreviated and conventional language.¹⁶

Conventional graphical language is also a possibility in relation to the indications of the entrances both from the outside and the internal distribution of the rooms (Figs. 1, 10, 11, 12).¹⁷

Referring to the opinion I expressed at the beginning of this paper, that the drawings on the clay tablets cannot be defined as architectural drawings in any proper sense of the term, and cannot therefore be seen as the indispensable technical support needed for the actual construction of a building, it becomes even more important to find answers to the central questions posed by this research: what was the purpose of these architectural plans drawn on clay tablets, and how do they relate to real architecture?

In order to formulate a hypothesis for answering these questions, I have considered further data from the layouts (Figs. 13–16) based on the preliminary classification that was presented at I ICAANE.¹⁸

The data visualized in these graphics, coupled with those given in the production of the layouts on the clay tablets outlined above, also establish, in my opinion, another point: the fact that their relationship with real architecture is present but that it exists for different

8. Fragment of a tablet. London. British Museum BM.38217. Dated to the Late Babylonian Period.

Plan of a ziqqurat, showing the main measurements of each stage, six at all.

Originally it showed in elevation seven floors. Even if Wiseman considered it as a good exercise rather than a project plan, however he outlined that the ratio of the dimensions corresponds to the one of the kisallu of the Etemenanki at Babylon. On the other hand Allinger-Csollich 1998: 316 and ff. considered it as a real plan indicating the third dimension recognizable again as that of the Esagila. W Sallaberger (2001) agrees fully with this assumption.

Finally, some new readings suggested by W. Sallaberger (1999–2000) have modified the actual data of this plan: indeed on the left edge of the drawing, corresponding to the second step of the ziqqurat plan, he recognized, after collation, the following numbers: “6 1/2 Nindan; on the step above, on the same left side, no number is missing”; as regards the bottom inscription, on the right side, he reads: “LU2.MAS.MAS ” Wiseman 1972: 141–145, Fig.1.

9. Anyhow we would like to suggest that in a very few cases this graphic activity can be what goes before the building: see Dolce 2000: 3–4, notes 15, 18.

10. Dolce 2000: 5, 10, Fig.1.

11. Kubba 1998: 78–79, Sauvage 1998a: 75, already Beale 1983: 81–82 and ff., who suggests the use at Tepe Yaya of a special type of kush more large than usually during the next periods.

purposes than the actual construction of the building, and that these drawings did not have one single use within society.

The direct matching that has been recently established by P. Miglus between the main types of the architectural plans of dwellings actually found in Mesopotamia and dating back between the 2nd and 1st millennium B.C. and some of the layouts drawn on the tablets¹⁹ certainly confirms the idea that this production is neither coincidental nor generic, and leads to the conclusion that the drawings refer to an actual building. But I do not think that the comparison can be taken much further than this. It may be a short step from the plan to the actual construction of a building, yet in every age it may be linked to specific phases prior to the building activity,²⁰ from defining the layout to choosing the technical solutions and specifically calculating the areas and the volumes, and even the amount of materials needed.²¹ We shall return to this point shortly.

In some cases it has been successfully shown that some of these layouts in themselves can be helpful to reconstruct actual buildings.²² This use of the ground plans to support our current understanding of the actual architecture of ancient Mesopotamia can, in my opinion, only be considered as being secondary to the main purpose for which the drawings were originally made.

We will now look at a series of architectural plans which, together with others currently being examined, make it possible to check our proposal and define a certain number of different uses for the ground plans drawn on the clay tablets.

We will obviously examine the cases of the more complete or comprehensive layouts, even though all of them are still insufficiently complete, including:

A plan drawn on a clay tablet from Nippur (Fig.17)²³ from the level dated to the Akkad Period at the Ekur, showing a building (or part of it) very carefully drawn in great detail, and with 13 rooms still visible; however no references are given, except a stair, but this only seems to indicate the structure, with no technical details. Moreover, contemporary dwellings or those from the Ur III Period at Nippur and Tell Asmar which American archaeologists have examined provide no significant matching with the layouts or the measurements of the individual features even though it is assumed that there is a "scale" (1: 240) close to the scale actually used for the constructions themselves.²⁴ The mismatch between the finiteness of the architectural plan on the clay tablet and the lack of any explicit unit of measurement has rightly been considered, even in the recent literature²⁵ as a sufficient reason for not considering this to be an architectural project.

It is more likely that this is a surviving example of one of the possible different types of house plans set into clay for dwellings of particular importance, in a given cultural period. With regard to the possibility of reconstructing the architectural plan in its original layout

12. Kubba 1998: 78

Figs. 3, 5: Fragmentary clay tablet from Babylon. London. British Museum. BM80083, dating to the Middle Babylonian Period. The tablet bears two plans on recto and verso.

Two different (?) buildings are drawn, both bearing cuneiform signs in order to point out the placement of the doors and (maybe) some measurements of the walls (the inscriptions are actually under the consideration of W. Sallaberger). The dating from the Middle Babylonian Period has been called in question recently by Allinger-Csollich, who considers the layout on Fig.3 as that of the Ezida, maybe in a previous lost building; Allinger-Csollich 1998: 231 and ff.

The graphic proposal on Figs. 4 and 6 shows that the outline goes from outside to inside the surface.

13. Dolce 2000: 6 and ff.

(Fig.17a), I would not accept the idea that the entrance from outside is in the stairwell, preferring instead an entrance from the front and leading directly into the square courtyard.²⁶

An architectural plan on the clay tablet in the Rylands Collection (Figs.18, 18a), which probably came from Umma, according to the proposed Ur III dating because of the use of Sumerian,²⁷ confirmed by the type of layout, is a classical neo-Sumerian temple. Even this plan is fairly complete in the drawing, in terms of the entrances and the circulation, and it

14. Figs.7 and 8: Fragmentary tablet (almost three fragments) maybe from Babylon. Berlin. Vorderasiatische Museum, VAT.413. Dated to the Late Babylonian Period. Plan of a large building, very accurately drawn with regard to the straight lines and the succession of the rooms. The main preserved space could be a courtyard, even if the placement of the gates on the left side is totally uncertain. The whole drawing shows full mastery of the draftsman. Although the inscriptions inside the plan represent length measures the reading of many of these advanced by scholars does not univocal: W. Sallaberger 1999–2000 proposed for them the use of the sexagesimal system (e.g., $5.20 = 5 \frac{1}{3}$), according to the one shown by Powell 1987–90: 467, and suggested that the numbers are indicating the thickness of walls along the upper and left sides of the rooms. He also modified the reading of some number inscriptions as follows:

first row of rooms from above: 1st room (from the left to the right: possibly $20+(x)$ instead of “20”; 4th room, left side: $25.40 (=25 \frac{2}{3})$ instead of “ $25 \frac{1}{3}$ ”.

2nd row of rooms: the thickness of the walls preserved at the left margin $(x).20$ i.e., probably $8(\frac{1}{3})$; thickness of the walls twice $8 \frac{1}{3}$ instead of “ $5 \frac{1}{3}$ ”; 2nd room: “ $25 \frac{1}{3}$ ” is doubtful; 3rd room above : 1; $02.40?$ (or $30?$) ($=62 \frac{2}{3}?$ or $1/2?$) in stead of “ $X \ 2 \ \frac{1}{2}$ ”; left side without doubt 4 (6.40)

3rd row of rooms: 2nd room: restore 24.10 instead of X because of the 3rd room; the thickness of the walls twice $8.10 (=8 \frac{1}{3})$ instead of “ $5 \frac{1}{3}$ ”. Finally, the highest number at the top of the plan probably indicates the complete extension of the building: “225”=3; $45.O=22.5$ m (Borchardt 1888: Tav.I).

Fig.9: Fragment of a tablet, maybe from Umma. Oxford. Ashmolean Museum, Ashm.1911–238. Two rooms and parts of two others of a plan of building, originally quite large, considering the extension of spaces and the wideness of entrances.

Firstly published by Grégoire 1996: 85, Tav. 42, who dates it from the Ur III Period while W. Sallaberger 2000 proposes a dating from the Akkad Period because of the measures used, as follows: “upper room:

1 TAR nindan la2 1 shu-du3-a gid2; (I TAR=probably $1 \frac{1}{2}$ nindan; I nindan “rod”=12 kush3 “cubits”); “ $17 \frac{2}{3}$ cubits length”; 11 kush3 dagal “11 cubits width”.

Lower left room (clockwise from top left):

4 kush3 1 zipah dagal “ $4 \frac{1}{2}$ cubits width”; (right side) 4 kush3 1 zipah dagal “ $4 \frac{1}{2}$ cubits width”; (right below) 1 nindan 2 kush3 2 shu du3-a gid2 “ $14 \frac{2}{3}$ cubits length”; (left below) (. . shu du3)-a gid2 “(. .)+ $\frac{1}{3}$ cubits length”.

Lower right room:

10 kush3 (. .) “10 cubits (. .)”

As regards this matter we recall also a Girsu fragmentary tablet:

Paris, Musée du Louvre, AOTb356; dating from the Early Akkad Period and firstly published by Thureau-Dangin 1897: 23 and 1903: 66, n. 356.

It is a plan, quite complete, of a particular building, in which are shown the measurements and functions of each room, six in all.

Many scholars suggested different readings of the inscriptions (as the interpretations of the functions of each room), particularly relating to the words (and spaces) “papah” and “ki-tush”, considered as a cult place inside a private house by Falkenstein (1941: 5, n.4, and 21, n.6), Von Soden (1950: 358), Lenzen (1955: 24–25) and Seidl (1967: 28–29); different opinions have been advanced recently by Zettler (1992: 84), who defines the whole plan as a domestic building; finally W. Sallaberger 1999 suggests the same interpretation and reads “pa-pah” as “reception room”.

also indicates measurements, which are always linear. This shows that the walls were approximately 1.50 m thick, while the whole building was 21.50 m (43 cubits).²⁸ However it should be noted that the overall extension of the lower series of rooms (plus the walls) does not total this length, and that the thickness of the walls are unusual for the plan of such a large temple. Once again, the scale is merely a placement indication. This means that the clarity of the drawing is not matched by the accuracy of the information.

A building plan on a tablet from Babylon (Fig.3) from the Middle Babylonian Period²⁹ has sharply defined features and indicates priority given to establishing a clear division between different sectors,³⁰ probably between the private residential area above and the public sector around the square courtyard, and lastly the area which was probably close to the entrance (bottom left). If this interpretation of the drawing is right, we are looking at information which indicates a type of building layout, albeit incomplete, because of the uncertainty about the entrances and the units of measurements used, reflecting a visible trend in real architecture.³¹

The same drawing as the one found on the verso of the tablet in question has also been repeated recently in a much coarser drawing (Fig.19)³² than the previous one, where virtually nothing is left of the graphic outline which was the distinctive feature of the architectural plan: in this new “form”, and assuming that the measurements indicated are in cubits and conventionally refer to the quantity of bricks used (or to be used), Allinger-Csollich see this as the layout of Ezida³³ in a reproduction that precedes the one that has been archaeologically demonstrated to be from the neo-Babylonian Period. In this latter hypothesis too the architectural plan in question would not appear to reflect “the” project of the famous place of worship, but sets out the details of the extension and the organization of the rooms through the brick, used as a guide unit.

It is precisely this latter hypothesis regarding the plan from Babylonia that leads to another highly plausible opinion about the purpose for which these handicrafts were made: the need to calculate the number of bricks and the amounts of raw materials that were needed or used, and how to use them, at that particular moment, and to record this on documentation for future consultation. We would like to draw attention, in this regard, not only to the architectural plan that I have just shown but also the one reconstructed from many fragments (Figs.20 and 20a) that may come from Sippar³⁴ dating back to the Late Babylonian Period, which probably represent a double temple. But once again the lack of homogeneity between the thickness of the walls and also the relationship in terms of the dimensions of the rooms show that it is fairly inaccurate, even with the supplementary elements and the alternative readings very recently proposed by Sallaberger.³⁵ In my opinion, this is a very valuable piece of evidence of transferring the number, implementation and dimensions (as many as four) of each brick used for the construction of a building to a drawing to be used as a drawing plan guide, both for the building process itself and for future similar building work.

15. As already outlined by myself (Dolce 2000: 3, 5).

16. Scholars are continuing to conduct research to establish one or more units of basic measurement governing the production of the layouts and their projections in real architecture (in other words architecture found in the field); these researches have produced many different results: see, besides Powell 1987–90, Rottlander 1976–77, Castel 1992, Kubba 1987: 128 and ff. particularly Kubba 1998, Forest 1998: 58 and ff., Powell 1995, and Robson 1997, where the scholar shows the high degree of knowledge regarding mathematical criteria during the Old Babylonian Period in Mesopotamia.

We would like to draw attention, finally, to the purpose that has been more generally indicated by scholars: real estate registration. The most cogent evidence in this regard relates to the original context, (as in the case of Umma, Sippar and Nippur) rather than the data supplied by the ground plans themselves, except in the case of the Sippar-Jahrurum drawing mentioned above.³⁶ The dating to the Old Babylonian king Abi-Esuh is certain, as is the definition of the functions of most of the rooms, and in our opinion the layout of the house was changed on the occasion of a family legacy.³⁷

One final point which helps to show the use of the architectural plans in question is the fact that there are no datum points for placement in a given context³⁸ except in the drawing of the plan with the bricks just recalled (Fig.20).

From all this data, whether 'negative' or affirmative, we find that in most of the drawings of the building layouts there is a calculated approximation—if I may call it that—which is organic to a use of the architectural plans that I believe to be frequent.

To sum up: The best evidence comes from the sites which are also scribe school centres: simple exercises or complete drawings, the architectural plans formed part of the documentation that had to be drawn up and transmitted to others for the following purposes:

The common—and in my opinion the most important—purpose was to create a set of samples of building plans and layouts, including the basic types of a previous consolidated architectural tradition and the "standards" of the present period.

What we are therefore proposing as the identity of these architectural plans is that they constitute basic "types" of the main layouts found in Mesopotamian architecture, which do not require any specific references either to the technical features or to the development of the elevations or the definition of volumes, but certainly not their positioning in the real context.

The function of most of the architectural plans is therefore to serve as a kind of basic layout repertoire, where the indication of the recurrent measurements are useful for the linear development of the buildings and the standard solutions for moving inside the buildings and the positioning of the entrances.³⁹

One further purpose, which we believe to be frequent, is to document the existence of a building of one particular type in the course of real estate registration operations. Another,

17. We are dealing with the following examples:

Fig.10: Fragmentary tablet maybe from Umma. Oxford. Ashmolean Museum, Ashm. 1911–239. Dating from the Akkad Period (see Fig. 9 and note 14)

Seven rooms (or part of them) of a building plan, likely of the same type as that shown in Fig. 9; the style of drawing is also very close to it. Grégoire 1996: 85, Tav.42.

Fig. 11: Fragment of a tablet from Kish (D.62), probably dating from the Akkad Period

One room and parts of three others of a building plan, the placement and the way to show the entrances correspond to those on the drawings just quoted (Figs. 9, 10) firstly edited by De Genouillac 1925: 44, Tav.52. Heisel 1993: 32–33, M24.

We can add two more plans on clay tablets:

Fig. 12: Tablet with a fragmentary building plan from Tell Harmal. Baghdad. Iraq Museum, IM.55413. Dating from the Isin-Larsa Period because of its own stratigraphical context (lev. III).

It is a very regular building plan, preserved for 2/3 nearly, focused around the central-main space, very likely an (open?) courtyard. It shows many gates for the interior circulation and seemingly only one from the outside Miglus 1999: 220, Tav.109, n.489, Hussein and Miglus 1999 in press.

Finally the tablet from Babylon just quoted (BM.46740) see note 7, Fig.1.

but rarer in our documentation, purpose, at least in terms of visibility, was to indicate in the drawing the quantities and the use of bricks of a given size, in order to acquire supplies of the building materials needed for construction. This point—and the construction phase proper—are well documented in textual sources and can also be seen from the archaeological evidence,⁴⁰ and also reappear in the celebrations of the Mesopotamian “builder-kings” in addition to other notations relating both to the quantity and the quality of buildings.

A further purpose, which is only an assumption, is that these were summary recordings of an already existing architectural plan to be re-used in the future. There are two types of evidence which point to this, one direct and one indirect: the first can be inferred, for example, from the well known Old Babylonian Sippar architectural plan⁴¹ which has been mentioned several times here, in which substantial modifications were made to a layout, probably in order to divide the building into two. The second piece of evidence comes from the consolidated continuity of occupation and in the function of an area in the Mesopotamian architectural tradition, which in some cases may require the schematic recording of the former layout.

I therefore suppose that most of the known examples of clay tablet architectural plan drawings are the few, but significant, remains of an architectural drawing activity upstream from all the subsequent activities. Drawing on clay tablets may well have been a means of transmitting and simply preserving, in an essential language, the memory of part of the heritage of architectural know-how to which to refer.

Part II

Francesco Maria Nimis

A few essential points should be taken into account to understand the purpose these kind of tablets were made for.

18. Cf. Dolce 2000: Table B. Fig.13 refers to all layouts on clay tablets from Mesopotamia and Elam so far known, according to three main typological groups (defined Territorial, Urban and Architectural) and points out to the properties of some of them in the historical period. I would like to emphasize here that the documentation examined has now been further complemented by other examples, one of which has been pointed out kindly to me by W. Sallaberger. Fig. 14 shows the total number of plans on clay tablets from each site and the number of detailed architectural plans.
- In order to proceed from general remarks to the specific ones, the next one, Fig.15, shows the maximum number of architectural detailed plans from each site in a single period; finally, on Figs.16 a-b are emphasized the amount of plans in each historical periods, and the relations between some scribal main centres and the documentation percentage of planning activity.
19. Miglus 1999: 217–221.
20. Although these “steps” are not necessary easy to recognize, however they precede the building itself.
21. This last step only is surely testified by some plans that however do not pertain building layouts: see i.e., Charpin 1983 and 1993.
22. Margueron 1996: 22–24, Fig.1, Zettler 1992: 83–86, Fig.19, see also Dolce 2000: 4.
23. Fig.17: Fragmentary tablet from Scribal Quarter at Nippur (2NT728), found in a fire pit placed on the akkadian floor (2b) in the Ekur. Philadelphia. University Museum, 55–21–150. Part of a building plan or, more likely of two dwellings joint by means of the top perimetrical wall. Questionable is the placement of the staircase in the first room-vestibule, where is located the (only?) gateway to the building in the suggested reconstruction MC Cown et al. 1967: 4, 22, 41, 172, Tav. 52a.

1. These clay tablets clearly appear as architectural plans of buildings; apart from one partial exception, we have no reports of drawings representing elevations or vertical sections.
2. There are no indications regarding the size and position of vertical and horizontal openings (i.e., windows and lanterns).
3. Stairs—if any—are represented “symbolically” just drawn to indicate their presence, rather than the correct size and location of steps (Fig. A).
4. Measures—when available—mostly refer to the room size only, and quite seldom to the wall size, too.
5. There is no evidence of written instructions on design essential features like the height of walls, the size, shape and location of openings, the measure and shape of lintels, the type of flooring and so forth.
6. Geometrically speaking, the drawing technique seems to follow the outline method rather than the projection one. As a matter of fact the orthogonal projection method (Monge) appeared many centuries later.
7. We also note the lack of signs indicating porches or columns even when the large span between the two wall heads seems to suggest their presence.

These facts let us think that the plans were made not for building but for illustrating or recording aims.

The analysis of the way these tablets were drawn makes us consider them as a kind of survey documents. They were probably made for three main purposes:

- Quantity survey sketches realised to calculate the number of bricks needed to complete the building.
- A sort of ante litteram typological survey to record the way important buildings were supposed to be laid out.
- Legal acts as suggested by inscriptions found on some tablets.

24. MC Cown et al. 1967: 41; as far as the layout concerns it is noteworthy that the akkadian houses at Nippur are usually smaller and not as regular as the plan in question. Indeed Fig.17 shows a large building—or complex—with many rooms and could testify to a specific (type of) construction during the same period.

25. Miglus 1999: 218, Fig. 484.

26. Regarding the hypothesis of the reconstruction of the original layout of the plan from Nippur, almost two points, in my opinion, appear doubtful (marked on Fig.17a), on the left side and in the middle, where as many entrances have been placed.

27. Fig.18: Tablet of unknown provenience. Manchester. John Rylands Library.

Plan of a building showing a very regular layout, all the walls in the same thickness and a great competence to draw. It comprises 11 rooms, of which the upper left one houses a staircase. The layout of the building and the placement of the gateway on the main axis (bent axis approach) identifies it as a temple, as already stated by Donald itself, (even if its presumed position inside a more wide secular complex can't be proved) and by Seidl 1967: 32–33.

The provenience from Umma is most likely because of the correspondences with Umma plan (VAT 7031), see Dolce 2000: 12–13, Fig. 6.

The plan has been reconstructed from four fragments; the tablet bears an inscription on the other side (still unpublished). The dating from the Ur III Period has been suggested by W. Sallaberger (2000) because of the use of the Sumerian in the inscriptions, regarding 19 measurements, on the layout and on the bottom edge (see note 27) Donald 1962: 184–190, Fig. p.184.

In many cases draughtsmen made use of both a proportional scale and preparatory lines, and they used to proceed from the external boundaries towards inside. Actually such method is suitable only when external dimensions are well known and only the inner division of space has to be still determined. As we can see from this example, while the external lines are sharply etched, the internal ones look irregular and less defined with erasures and corrections (Fig. B).

Thanks to these clues we can infer that once the external dimensions were easily determined the draughtsman first etched the external walls, and then he had to proceed drawing room by room, adjusting the plan accordingly; however, this sequence of events was possible only to represent something already existing. Suppose to design a plan for construction purposes: he should have determined all the walls and openings dimensions before etching—probably on some raw surfaces or wax tablets—and then, using preparatory lines, he just drew sharply all the lines for he simply had not enough time to lay down a project directly on a fresh clay tablet.

However, the most important fact we have to consider is the lack of vertical projections like elevations and sections. Only an outline of the Ziqqurat from Babylon might be read as something close to an elevation sketch, but as a matter of fact, it is nothing more than a general diagram of dimensions rather than a proper elevation. The absence of a related plan as well as of some important details like stairs makes it useless construction-wise, but helpful to quantity survey.

For many centuries men used to build their houses and temples almost without any preliminary project, just following the local tradition and making minor changes directly in the yard. Eventually they used to make small scale models to solve some difficult spatial problems. Only after the invention of a drawing support such as paper easy to produce and to handle, the drawing technique improved radically, thus becoming suitable to design and construction. When it happened (mind the Renaissance) the story of Architecture deeply changed its route.

Now what we have are undoubtedly plans of houses and temples, but they were drawn outlining the intersections between walls and floors, just like any non-professional would do nowadays. This drawing procedure fails all the things requiring projective pictures, for instance thresholds, window openings, lanterns or steps. When we find stairs they are represented through a symbolic diagram, which hardly matches with the real thing.

28. According to W. Sallaberger 2000 the inscriptions on the layout show length measures only: He reads on the top wall:

“3 kush iz-zi-ta as “walls of 3 cubits each”, while for the rest of the text see previous editions. Sallaberger suggests that the measurement indicating width of the temple(at the left side of the tablet) is to be reconstructed as: “2 1/2 nindan(3 kush) “2 1/2 rods (3 cubits) (=33 cubits).

For the total area of the building see Robson 1996: 189, n.9. Sallaberger states also that the length of the building is 3 1/2 rods cubit=43 cubits, according to the first and the second rows of rooms, except the lowest row.

29. British Museum BM.80083, referred to above for the preparatory grid in the drawing; published by Wiseman 1972: 145, Fig. 3, see note 12.

30. As noted by Miglus 1999: 220.

31. As regards the type of a central courtyard-layout “with an incorporated reception room” see Miglus 1999: 220, Pl.109, n.487a.

32. Allinger-Csollich 1998: 232, Fig. 45 (on the top), already Heisel 1993: 35, M28.

33. Allinger-Csollich 1998: 231 and ff., see also note 12 above.

Those signs merely showed the presence of a stair as they did not pretend to describe its shape, size and correct location. Moreover if we try to build something out of a drawn project we need both horizontal and vertical data; this means that we need plans, but also elevations and sections drawings showing not only the height, but the shape of buildings as well.

On the contrary, plans with measures often fit the need for a quantity surveyor once he knows the height of the walls. The Mesopotamian “clay” civilisation needed to know the number of bricks they had to produce to build large monuments like palaces, temples and ziqqurats, and therefore surveyors able to measure, describe and eventually computing the right amount of stuff were greatly requested.

It is also worth considering that only a minor number of tablets show indications of measures; this fact makes us suppose a second kind of purposes requesting only the lay out recording. We should take into consideration legal documents matching with some commercial transactions as well as illustrative sketches probably used just to remember the building shape or to show how it was intended to be laid down. Measures could be avoided in these peculiar cases because the main goal was to represent the type of building rather than its size. The reason why the ancients needed this kind of illustrative records remains still unclear, but we can presume that the habit of recording developed from a plain text to a primitive, but effective drawing. Albeit some problems when dealing with trapezes, the drawings are quite accurate from the topology and dimension-view point, and therefore we can conclude that great attention was paid to graphical records carried out by a highly specialised class of scribes.

Some of the tablets look like scholar exercises and in spite of the relatively small number of tablets with drawings, we can acknowledge—from their graphical quality—the advanced level of the drawing method and the importance the ancients gave to this particular technique.

Notes

* This paper has been carried out with the contribution of W. Sallaberger who preliminarilly read and interpreted the inscriptions placed on the architectural plans in question, in 1999 and 2000.

F.M. Nimis took care of the graphical integrations and reconstructions and discussed with me on many occasions some main technical questions relating to architectural projects. I thank both for their valuable work and suggestions.

34. According to Heisel 1993: 46–49, and Sallaberger 1999, King 1906, and Seidl 1967: 26, 41 considered the provenience of the tablet unknown.

Figs. 20 and 20a: Fragmentary tablet partially reconstructed by nine fragments. London. British Museum BM.688/40+41+42+43+44+45. Plan of a large building showing actually four whole rooms and sectors of other spaces, analyzed firstly by Seidl 1967: 42–44 and published by herself and E. Heinrich in a reconstruction (Seild 1967: Fig.17) that suggests a double temple. The analytical indication of the bricks employed for the walls is noteworthy and maybe very useful to understand the function of some plans. See note 39 below.

The measuments are shown in kush, the “scale” proposed in order to the standard brick of the period goes from 1: 66 to 1: 60, according to Allinger-Csollich, he suggested that the brick itself (and parts of it shown in the plan) is the unit-measurement precisely noticed in this drawing: see Allinger-Csollich 1998: 153. King 1906: 3, 49–50, Tav. 50.

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35. In fact W. Sallaberger proposed that "the text pertains to a scholarly context, written in all 4 directions, and that the main orientation is not certain, perhaps towards the north", according to Seidl 1967: 43, Fig.17. Indeed he suggested some variations in the reading of the numbers as follows:
 outside of the building:
 on top: (. . .)15 Kush3 (x)Ush(. . .) i u i Im.Mar.Tu "(. . . x+?) 15 cubits(x) lenght? (. . . east a)nd west". At the right : (. . . Im).U18.Lu à Im.Si.Sa2". . .)south and north".
 Room1: 5 Kush3 Us2 E2 Im(. . .): "5 cubits length north—room"
 2 Kush3 8 Shu(.Si)/Dagal Ka2: "2 cubits 8 fingers breadth of gate" (leading to the room n.3).
 On the top, left side : the scholar reads " 3"
 Room n.2 : (. . .) (x) ra ku/ (. . .) Im.Kur.Ra: "(. . .) ? (. . .) east-(room ?)"
 3 5/6 Kush3 Sag: "3 5/6 cubits front"
 2 Kush3 Dagal Ka2: "2 cubits breadht of gate" (leading to room n.4)
 Room n.4 : I Kush3 x(. . .): "I cubit (. . .)" (= recession of 1 1/2 bricks)
 5 Mu(. . .): "5 x (. . .)" (= front of room=7 1/2 bricks)
 6 K(ush3 ? . . .): "6 cu(bits ? . . .)" (= length of the room)
 Room n.5 : 3 Kush3 Dagal Ka2: "3 cubits breadht of gate" (leading to room n.3)
 13 Kush3 Us2 Kisal: "13 cubits lenght of court"
 (3 Kush3 Dagal Ka2): "3 (cubits breadth of gate)" (leading to room n.6)
 6 Kush3 Sag Kisal: "13 cubits front of courtyard"
 Room n.6 : (. . .) Shu. Si Us2 ash-ru-ka-tu4/(. . .) sha Ka2 Im.Si.Sa2:
 "(x cubits x) fingers length of "longitudinal room" (?) of north gate"
 Room n.7: 3 Kush3 Sag: "3 cubits front"
 13 Kush3 Us2 E2 (I)M.Mar.Tu : "13 cubits length of west-room"
 2 Kush3 8 Shu.Si/ Dagal Ka2: "2 cubits 8 fingers breadth of gate" (leading to room n.6 "
 W. Sallaberger said that "the measurements of the rooms are given according to Sag "front" and Us2 "length" (always Us2> Sag). Dagal="breadth/width" of gates. For the orientation of the plan according to the four cardinal points of the compass and the relationship 1 Kush3=1 1/2 brick see already Seidl 1967: 40".
 ad n.5: 2nd and 4th line: the important new reading Kisal is epigraphically sure (see e.g., Borger,ABZ,p.40 3rd column).
 The reading is in accordance with the layout of the temple.
 3rd line: the number "3" in the gate between rooms 5 and 6 is missing in the plan of Seidl 1967: 43, Fig.17
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36. See note 1.

37. See also Dolce 2000: 14–15, Fig. 10a-c.

38. Once again, the “mappa mundi” has recently been considered to be the only example produced on a dimensional scale, even though it is quite likely that it was based on a number of conventional criteria underlying Mesopotamian “cartography”. It is also likely that in early Mesopotamia the cardinal points were identified using natural indicators such as the sun and the winds: see Horowitz 1998: 20–42, 195.

W. Horowitz’s remark that in the celebrations of the Assyrian conquests the margins are cited rather than the conquered territories, is further confirmation, in my opinion, of the general assumption that a linear “measurement” criterion was used, rather than a measurement of volume, even in the formal description of the lands conquered.

39. Here we would merely recall that the first appropriate place designated for drafting the layouts must have been the scribal school where the students also practiced the making of standard layouts on clay tablets, to acquire specific skills in this art during the course of their training.

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Regarding the plan, which may be from Sippar (Fig. 20 and 20a), very recently Sauvage 1998: 75–76 reaffirmed the view that the bricks are used to measure the walls and the whole brick itself must have measured the standard 33.33 cm square. If this is so, the graphical depiction on this layout is a way of visualizing the measurements using the brick module to measure the size of the wall. This is very close to the idea of an architectural project. Fixing standard criteria for the bricks to be used for constructions has been shown to have occurred in the Ur III Period and maybe already started during the Akkad Period (see Sauvage 1998: 58 and ff.).

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From Monument to Urban Complex: The City of Ebla as Symbol of Royal Ideology

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Introduction

The Ebla tell structure can be considered as an unicum compared to other Near Eastern sites: its topographic construction actually points out the location of the decisional centre, the Acropolis, and the defensive perimeter of the wall delimit the Lower City in a striking and monumental way. As a strong continuity is attested by the same settlement position in both main phases (EB IV A–B and MB I–II), and that continuity seems not to have been determined just by functional aims, this contribution will detect some ideological and cultural elements that influenced the spatial organisation.

In other words, the hypothesis is that the unconscious reaction to the contrast between the ordered urban territory—immediately known in its spatial limits—and everything outside it—unlimited and unknown—caused some of the peculiar classification forms, archaeologically understandable through the administrative expressions of the royal power.

The “Four Quarters of the World”: the Atlas Symbol

It can be argued that the concept of the world as an immense, but bounded and quadripartite entity was first conceived at the early North Syrian, Centre and North Mesopotamian urban cultures.¹ Actually, this concept is not attested in the pre-akkadian Sumerian background,² and it presumes the sedentary placement and the belief of being the centre of the cosmos (at least in the early manifestations).³

Likely, this cultural attitude is also expressed in the Atlas symbol; the mythic figure bears a circular quadripartite sign where two lion heads face two human ones (Matthiae 1995: 104). The emblema related to the “Cosmic Quadripartition Theory” (Matthiae 1982:

1. This conception of the world belongs to several cultures different from each other in time and space. So it might be due to human mental frames in particular environmental conditions.
2. Its first evident attestations are in lines I.6–7 of Naram-Sin from Akkad’s inscription found on a fragment of a copper statue near Bassetki (Ayiš 1976: 63–75) and in the titles of the king himself: “lugal an-ubda limmuba / šar kibratim arba‘im”, (Halla 1957: 49 ff.).
3. The full consciousness of the opposite concepts “inside” and “outside”, “centre” and “suburb” referring to the territory is possible only in a developed urban context (Liverani 1976: 442–443). These concepts can work as basic references for a first codification of the territory, necessarily constant in time, at least in its main characters. This kind of settlement was attested for the first time in Mesopotamia and in the Nile Valley (Liverani 1995: 107 ff.); in this area the only territorial cultural interpretation regards Egypt itself divided in the “Two Lands” (Upper and Lower Egypt) (Trigger et al. 1989: 57).

82) is built on the symmetric overlapping sections, adverse and opposed in their meaning; in this way, the symbol—inspired by the royal milieu—replaces the same space division form, known and accepted since early historical times.

Considering the reciprocal cultural and linguistic influences between not-Sumerian and Sumerian peoples, we observe at Ebla a division of the Universe close to the Sumerian one, but much more interested in representing a flowing integration of beings. The Sumerian citizen wants to put under his control all fishes, birds, and minerals.⁴ The Eblaite citizen wants to control the four parts of the world, where fishes, birds and minerals are housed (Fileni 1997).⁵

A Cosmos Divided into Four: Early Syrian Ebla

With the *Cosmic Quadripartition Theory*, represented by the Atlas, it was pointed out that—in this cultural complex—the division operation, realised with symmetries and oppositions, is an instrument of royal ideology to figure the *Order* triumphing over the *Chaos*. Anyway, it is well known that these kind of images may have had a meaning for a limited public (next to administrative hierarchy), but certainly their message would not have had influence on citizenship; the other hypothesis of this research is concerning the existence of a great and ambitious urban project in the Old Syrian Ebla planning aimed to amplify the message recorded in the Atlas iconography.

Even if tried (Pettinato and Matthiae 1976; Matthiae 1995), it is still impossible to reconstruct an evident frame of the urban re-treading of the Four Quarter division schema from Royal Archives Texts: in fact there does not exist a single text citing the four gates archaeologically attested.⁶ The references made by Pettinato to the City Gate,⁷ to the ^dUTU,⁸ ^dDagan, and ^dRasap⁹ gates are not proof that these are the main entrances to the centre; furthermore the KA₂ sign has more than one interpretation.¹⁰

Nevertheless, as noted and verified, the topographic urban order in the Middle Bronze Age is similar to that in the Early Bronze Age; probably, the purpose to dedicate the city temples to the same god worshiped in some outer sanctuaries was an act of celebration of the royal power. Concerning this hypothesis, there follows here a new view of the historical geography described in some texts.

4. The Sumerian view does not consist of a process of a total abstraction of the object from its real situation, but in a paratactical juxtaposition of it to all the other entities in the world.
5. (Fileni 1997: 101–107; 156–157). It is important to consider the dissimilarity between the scribe's view of the world and that of most of the population, unaware of the scribal technique (Harrison and Callari Galli 1997).
6. They are: the south—western gate (A), the northeastern gate (BB), the southeastern gate (L) and the probable northwestern gate, object of recent exploration (DD).
7. The sign *al*₆ is now read “*makh*” (= “big” or “first, superior”). It is no longer interpreted as “city”. The gate is mentioned in TM.75.G.243 and 524.
8. The gate is mentioned in TM.75.G.1521.
9. The gate is mentioned in TM.75.G.1438.
10. When the sign *ka*₂ is followed by a divine name it may mean the door of a temple or an area of the city. Sometimes the sign *ka*₂ is followed by a common name: as *ka*₂ has also the meaning of an administrative unit, it may indicate the building of the person mentioned. So this term has more than one meaning and in Ebla texts it is very frequent. It is, however, never clearly and directly referring to the city gate. The term “big gate” is difficult to explain, as it has no divine names or other kind of references.

The Southwestern Quarter

*Ka*₂ ^dRasap should be the door of the Rasap temple, identified in the south-western area of the Lower City on the axis joining the Gate A and the Acropolis: ¹¹ following what was suggested before, an outer sanctuary dedicated to Rasap/Rešef should have been reachable through this gate, as well as another one sited inside the city. Rasap and his wife Adamma are often cited in the texts related to different places: ‘Adani/Atanni,¹² Dunep/Tunip,¹³ and Gunum (Bonechi 1993: 165). These three toponyms, all placed southwest from Ebla, are seats of the Rasap cult: the Eblaite Rasap temple was thus located in the southwestern quadrant of the city, corresponding to the gate looking at the Rasap sanctuary.

The Southeastern Quarter

*Ka*₂ ^dDagan could be the gate of the Dagan temple. Anyway in this quarter any archaeological excavations have never been conducted. However a Dagan temple should be supposed in the southeastern quadrant of the city; in fact, the Acropolis mound is surrounded by temples on south—western, northwestern and northeastern sides.¹⁴ This could imply the existence of another temple southeast from the Acropolis. Also in this case a correlation between an inner and an outer sanctuary is attested. Ebla texts mention very often Dagan, specifying his places of worship: Dagan from Tuttul,¹⁵ Dagan from MaNE¹⁶ and Dagan ganana’im,¹⁷ all related to a ^dBAD or ^dDagan¹⁸ worship-place east from Ebla.

The Northeastern Quarter

*Ka*₂ ^dUTU should be the gate of a Sun god temple; an Old Syrian temple dedicated to the Sun god was discovered at Ebla (Matthiae 1995: 160). Nearby are the remains of an EBIVA shrine, maybe consecrated to a similar god (Matthiae 1995: 53). There are many references in Ebla texts hinting at places about ^dUTU worship: e.g., *ARET XI. Testi rituali della regalità* (Fronzaroli 1993) and *Hymn to the Sun God* (Lambert 1989).

The first text is about the ritual journey made by the royal couple and the divine couple Kura-Barama in several places before the arrival to the Royal Ancestors’ mausoleum at Nenaš/Binaš, 20 km northwest from Ebla (Bonechi 1993: 78). The cult of the Sun God is attested in the places reached by the king and the queen. In those places, Irad, Udukhudu

11. It is the Temple B1 (Matthiae 1995: 160).

12. It can be identified with Atanni mentioned in Alalakh’s texts that had to be located on the upper Oronte, southwest of Ebla (Bonechi 1993: 18–20).

13. It can be identified with Tunip near Hammath (Bonechi 1993: 114).

14. The Temple B1 with the Sanctuary B2, the Temple P2 with the Monument P3 and the Temple N, respectively.

15. Identified with Tuttul on the Balikh = Tel Bi’a, cultic place of ^dBAD (Dagan) (Bonechi 1993: 119).

16. It is an important Syrian centre, cultic place of Iskhara and of ^dBAD (Iškhara is known as the wife of Dagan).

It is situated east of Ebla, in a strategic position, along the trade routes between Ebla and Mari (Bonechi 1993: 27–228).

17. Term referred to ^dBAD (Bonechi 1993: 147; Archi and Biga 1982, *ARET III* 31 r. II: 13).

18. BAD means “wall, fortress” and it is interpretable as a divine attribute related to Dagan, the god of war and strength: Sargon of Akkad, in his stele, says he conquered the upper country thanks to Dagan.

and Niap (Bonechi 1993: 205, 303, 260), sacrifices for the Ancestors (Fronzaroli 1993)¹⁹ are celebrated “when the Sun rises”. The Sun god is particularly related to kingship: for this reason a ^dUTU temple should have existed in Ebla, in the north—eastern sector, in front of the gate towards the outer ^dUTU sanctuaries. It seems possible to localize these centres northeast of Ebla corresponding the supposed Nenaš/Binaš mausoleum position, the goal of the ritual journey.

The text adds that the royal couple reached Nenaš/Binaš by “the Long Way” (Fronzaroli 1993):²⁰ evidently these centres are located in opposite directions, far from the mausoleum place, i.e., northeast of Ebla, not northwest. The mention of a region called “Waters of Masad, those of Nirar” (Fronzaroli 1993),²¹ first stop of the travel, is consistent with this hypothesis. This place east of Ebla could be compared to the quotation of a ^dUTU swamp in two Eblaite texts (Archi and Biga 1982: *ARET III*; Biga and Milano 1984: *ARET IV*),²² in the first referring to the Madkh area, south from the Quweiq river (hypothesis contrary to the one made by Bonechi on the possible Nirar localization), in the second referring to Adaš^{ki}, maybe the Ghab area, placed southwest from Ebla and diametrically opposite to the Madkh one.

It is possible that both these geographical areas were in antiquity consecrated to the god ^dUTU as the former is towards east, in sunrise direction, the latter towards west in sunset direction, traditionally the dead region sacred to the god Rasap/Rešef.²³ An Ugaritic text joins both ^dUTU and Rasap, saying: “Shapash set and his doorkeeper / was Rasap” (Xella 1979–1980: 149). The Sun God during his daily run rises from the water at dawn, and symmetrically dies in the water at sunset, accompanied by Rasap. At Ebla it is well attested as a ^dUTU cult, and it is not unusual that a temple in Ebla was dedicated to him since the Early Bronze age.

The second text, the Hymn to the Sun God, describes the rising of the Sun from the northeastern mountains, where there is a “Shrine in the Mountains”. This shrine could be a worship place in connection with a mountain sacred to the sun, most likely northeast of the city. Then the hymn draws the setting of the Sun “on the other bank of the sea” where a temple is constructed. The existence of two ^dUTU cult places, an open-air northeastern sanctuary and a southwestern temple, towards the sea seems probable. Once more it is pointed out the natural eastwest run of the sun and its particular link with the underworld, where the sun spent the night (Healey 1980: 239–242).

The Northwestern Quarter

In the northwest sector of Ebla, the presence of a Hadad temple, since the EBIV age, has been suggested (Marchetti and Nigro 1997: 3), so that the probable inner and outer corre-

19. Fronzaroli 1993, *ARET XI* 1 r. XIII: 14–15: *dingir Abur-Lim*; r. XIV: 6–7: *dingir Amana*; r. XV: 9: *dA’aldu*; r. XV: 15: *dDayin*.

20. Fronzaroli 1993, *ARET XI* 1 v. I: 9–14.

21. Fronzaroli 1993, *ARET XI* 1 r. VII: 9–12. Mašad: northwestern Syrian centre, maybe north from Ebla (Bonechi 1993: 29); Nirar: important Syrian kingdom northeast/east from Ebla, maybe west from the river Quweiq (Bonechi 1993: 266–268).

22. In *ARET IV* 15 (Biga and Milano 1984) AMBAR^{ki} (= “pond, marsh”) is followed by ^dUTU. In *ARET III* 587 (Archi and Biga 1982) is mentioned an AMBAR^{ki} determined by Adaš^{ki}, an important Syrian centre probably referring to the Ghab area (Southwestern from Ebla) or to the Madkh area (north—east from Ebla). The first reference is more probable than the second one; in fact the second one can be identified with the pond mentioned in *ARET IV* 15 or with the “water place” in *ARET XI* 1 r. VII: 9–12 (Fronzaroli 1993).

23. In the Old Syrian city, in the southwestern area, there are the Temple B1 and the Sanctuary B2, probably referring to mortuary cult (Matthiae 1995: 160).

spondence could be confirmed. In the north, an important sanctuary of Hadad was located in Aleppo (Bonechi 1993: 171–172).

Several references to the god in written sources seem to confirm this hypothesis. Here the god is associated with many centres: Armi, Dub, Lub and Luban (Bonechi 1993: 52–55, 107–109, 219–220, 220–222). The places are all centres directly dominated by Ebla: in fact, they have no own royal authorities. On the contrary, kingdoms with own kings are not mentioned in the Ebla Archives in connection with god names (Bonechi 1990). Significantly Dagan is always related to Tuttul and never to the Mari kingdom²⁴ or to Terqa, the near cultic centre under Mari control (Liverani 1995: 380).

Same Cosmic Division, Different Power Ideologies: Ebla and Akkad

During the Early Syrian age, Ebla was a dominating royal power seat whose area of dominion covered the entire northern Syria, west of the Euphrates River. The region directly submitted to Ebla according to the Royal Archives texts reached at least Karkemiš (east), the Antioch plain and Amanus (west), Taurus (north) and beyond Hama (south), (Matthiae 1995: 260; Archi 1992). At the same time Ebla plays a main role in a very wide trade net (Matthiae 1985: 48–49; Matthiae 1995: 268), able to occur frequently and in many ways onto his huge hinterland (Matthiae 1985: 37–49; Matthiae 1995: 262–263).

In this town placed in a political context less conflictual than the contemporary Lower Mesopotamia, titles as “king of the four edges of the world” or “king of the totality”, frequently since Naram-Sin of Akkad, should have been less significant in the ideological sphere. In fact there are no kingdoms close to Ebla as to make its citizens anxious about a possible invasion.²⁵

The Akkad dynasty upsets the political-territorial situation fixed in Early Dynastic Mesopotamia, rising to a “heroic’ and warring kingship” (Liverani 1993: 4) that reaches its power with the creation of an empire unifying the territory of each city. Naram-Sin, the last king of Akkad, completes this ideological revolution: firstly, he assumes the title of “King of the Four Corners of the World”. Secondly, he divinises himself (Halla 1957: 49), an uncommon action for the previous Mesopotamian kingship (Liverani 1993: 4).

The royal ideology of Ebla has different characteristics: it does not need to emphasize the defeat of the enemies (even if it is not unknown, in Ebla, a particular idea of the war), rather it prefers the ritual and the cultic expressions.²⁶

From the outside Ebla comprises the entire world divided into four parts: the Hadad sanctuary is projected towards the mountains (northwest), the ^dUTU temple towards the waters of the Euphrates river (northeast), the hypothetical Dagan sanctuary towards the

24. The definition of the city as *kingdom* and as *centre* belongs to an article written by Bonechi (Bonechi 1990), in which the author distinguishes cities that are *kingdoms* (with their own king) from cities that are *centres* (depending on more powerful cities): this situation is typical of Ebla at the passage of dynasty and at the end of the Early Syrian age.

25. Actually, conflict *inter pares* is attested only with the far centre of Mari (Matthiae 1995: 258; Liverani 1995: 206–207) and it regards institutions. That is why it is distant from the citizens, who really are worried about their personal safety, and who did not feel the need to be protected by royal authority from this kind of threat.

26. A particular war ideology is attested at Ebla, thanks to the findings, in some rooms of the Royal Palace G, of interesting fragments of reliefs of wood and calcareous inlays, obviously inspired by the war (Matthiae 1985: Pls. 41c-e, 42b, 43c-d, 47e-f). These inlays can be compared with some administrative texts, in which is described the sending of some heads of enemy kings to the king of Ebla (Archi 1995).

steppes (southeast) and the Rasap complex towards the sea waters (southwest). These directions are moreover the gods' abodes and their physical manifestations: Hadad is the mountain god, lord of weather phenomena; Dagan is the steppes god, linked to sheep-herding and breeding; Rasap, the underworld god, is related to the sea; ^dUTU, justice keeper, is the sun-god rising from the river at east. Mountains and steppes, river and sea defined the boundaries of the world and in its centre was Ebla.

Conclusions

Ebla appears as a city ordered according to the quadripartition of inner space with a major temple in each sector; the four gates are the points of contact with the outer world, which also is divided into four parts.

The macrocosm, and in its centre the microcosm Ebla, is a big controlled space based on the presence of four places of worship dedicated to the corresponding Eblaite gods. The narrow relation between the inner and the outer world is created by those divine correspondences sealing the rules of the macro- and the microcosm.

These gods are also related to the natural boundaries of the macrocosm: Hadad with the mountains, Dagan with the steppe, Rasap with the sea and ^dUTU with the river water. This mental setting is probably reflected in the seal impression, where Hadad and Dagan could be recognized in the two lion heads related to the nature around Ebla, mountain and steppe, ^dUTU and Rasap in the two human heads, symbolising the dawn and the setting of the sun, the birth and the death of each man (Dolce in press).

In the first of its two main phases, the city of Ebla experienced the condition of being an important and independent kingdom that, in the same city structure, was presented as a symbol of an influent royal power, dominating also the regions far from Ebla itself. In the second phase, Ebla is a centre with a limited independence, which does not control far regions, but still maintains its status of holy city (Matthiae 1995: 188, 196); for these reasons we can observe a centralization of the religious functions related to royal succession rites, a monumental re-building of the sacred structures, which assume a new aspect, although maintaining, in many cases, the original Early Syrian placement.

The annual researches and studies at Ebla have, on one hand, clearly demonstrated, the relationship between ancient man and space and between power and space itself, and on the other hand, they are an occasion to precisely define the attitude of the ancient citizen towards the artificial urban world, power icons, and natural ecosystems.

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SECTION IV

Excavation Reports and Summaries

Four Seasons at Gavurkalesi

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Abstract

Four seasons were undertaken by the author at Gavurkalesi, in 1993–94 and 1997–98. Investigations were carried out at the site, in the surrounding valley, and, very preliminarily, in an area of approximately 600 square kilometers in the Haymana Region around Gavurkalesi. The regional survey suggests that, although Gavurkalesi itself was not occupied in the Early Bronze Age, the Haymana Region was filled with small farming villages in this period. A much sparser settlement pattern characterized the Middle-Late Bronze Ages. The site is well-known for its Hittite Period rock reliefs and cyclopean structure with a false-vaulted chamber. It probably served as a special type of cultic institution in the Haymana buffer zone between Hatti and the Arzawan states to the west and southwest. It is proposed hypothetically that the ancient site may have been reused in the Phrygian Period as a cult center for the worship of Kybele and as an oracle.

Introduction

Four seasons of investigation were initiated at Gavurkalesi in 1993. The first two seasons (1993 and 1994) were undertaken under the auspices of Bilkent University, Ankara. Investigations in two further seasons, in 1997 and 1998, were carried out by The Carsten Niebuhr Institute, University of Copenhagen.¹ Gavurkalesi is located in the Haymana Region, 60 kilometers southwest of Ankara (Fig. 1). It is situated in the center of a narrow, 2 kilometer-long valley in rough, hilly terrain on the western edge of the broad valley that connects Ankara to the Konya Plain. The well-known reliefs and structural remains at Gavurkalesi are located on a natural hill that rises 60 meters above the valley floor (Fig. 2). The fairly level summit of the hill measures approximately 90 by 70 meters in extent. The Gavurkalesi hill is situated at the narrowest part of the valley, where it becomes a shallow gorge through which a stream flows. It is flanked by terraces and faces an abundant spring on the southern slope of the valley.

Previous work at Gavurkalesi is confined to a 10-day season in 1930 conducted by Hans Henning von der Osten for the Oriental Institute, University of Chicago (von der Osten

1. The author would like to express his gratitude to the Directorate of Monuments and Museums for permission to work at Gavurkalesi. Mr. İlhan Temizsoy, Director of the Museum of Anatolian Civilizations, in Ankara, was always a very kind and helpful colleague, and the last season was undertaken in collaboration with him and the Museum. Many thanks to the staff of the Museum, most especially Tahsin Saatci, Nusret Cetin and Izzet Esen, who so ably acted as Ministry Representatives. Murat Arslan served as Assistant Director for the 1997–98 seasons. Stevan Beverly was the project's surveyor-architect. He is responsible for Figs. 3, 4 and 9.

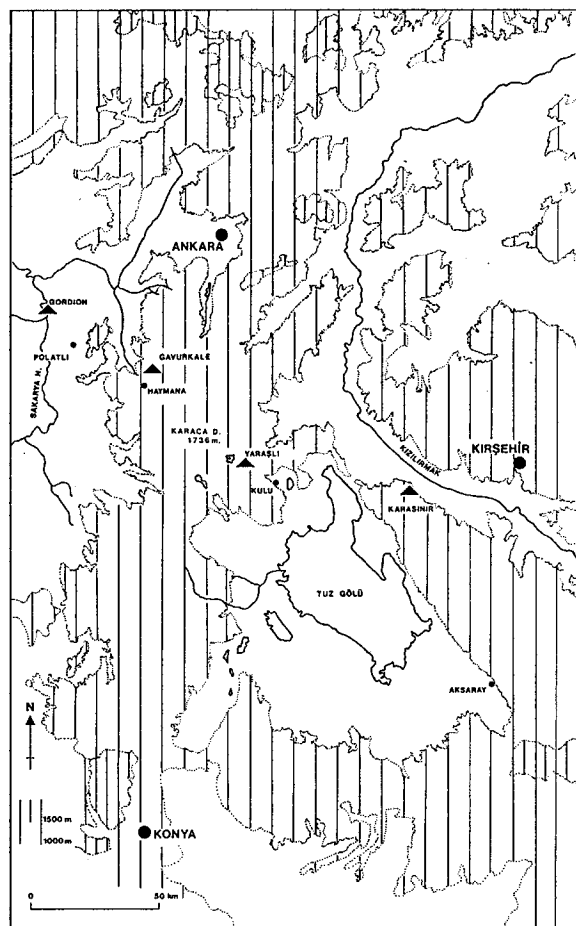


FIGURE 1. Location of Gavurkalesi (after Summers 1992: Fig. 1).



FIGURE 2. View of Gavurkalesi from the south.

1933). Von der Osten documented two main occupation phases at Gavurkalesi: Hittite, represented, in his view, by the reliefs on the limestone outcrop on the summit of the hill, the cyclopean structure above the reliefs, and retaining walls and towers on the slope below the reliefs; and Phrygian, represented by the encircling wall on the summit and the “mansion” atop the earlier Hittite monument.

The focus of the new project has been on the Hittite Period monument at Gavurkalesi itself, and on placing it in a broader geographical, economic, and historical context. Work was undertaken at the site, and within the narrow 2 kilometer-long Gavurkalesi valley, and, very preliminarily, within an area of approximately 600 square kilometers in the western sector of the Haymana Region, around Gavurkalesi (Lumsden 1995, 1996, 1999, 2001; Lumsden and Temizsoy 1999).

Although the Haymana Region has witnessed relatively little archaeological investigation, surveys, in addition to our own, have recently been undertaken there (Ertem 1992; Omura 1995b, 1996). Our regional survey conforms to a section of the Haymana area that might be characterized, in general, as “enclosed”, and which is quite different from the surrounding open plains. As such, it is a distinct geographical zone, entry into which is mainly through easily defended gorges or narrow passes. Serving to demarcate it are hills and plateaus, which are pierced by these narrow access routes. Within are narrow valleys, cut by

stream beds and framed by terraces and hills. Other topographical forms include narrow gorges and great, protruding stone outcrops that form flat-topped buttes. Caves are common, and springs are abundant everywhere. The hot springs at the town of Haymana are a popular attraction.

This landscape, which might not seem amenable to large populations, is, nonetheless, full of sites, most of which are not readily visible. Sites, in general, are rather small, and tells are fairly rare, low-lying, and mostly only cover 1–2 hectares. Although in a very preliminary stage, the survey data suggests a pattern in which the most populous periods within the region, and those with the broadest use of all the available landscapes within the survey area, were the Early Bronze Age and, most especially, the Byzantine Period (Lumsden and Temizsoy 1999). The survey seems to document a pattern of settlement in the Haymana Region of mostly relatively small-scale societies throughout all periods. What follows is a brief summary of the history of settlement at Gavurkalesi and within the surrounding region during the Bronze and Iron Ages, based on the work since 1993.

Early Bronze Age

Gavurkalesi was not occupied in the Early Bronze Age (ca. 3000–2000 B.C.). However, preliminary investigations in 1993 at Samutlu, approximately one kilometer away, in the more open eastern end of the Gavurkalesi valley, revealed evidence for an Early Bronze Age settlement of perhaps as much as 3–4 hectares on a large terrace above the stream bed as it turns towards Gavurkalesi (Fig. 3). The surface had been terraced and was covered with chipped stone tools and plentiful examples of the hand-made dark burnished monochrome ware typical of this period in Central Anatolia (as well as Phrygian through Byzantine ceramics) (Lumsden 1995). Unfortunately, between the 1993 and the 1994 seasons, the local farmer bulldozed away the terracing, smoothed the surface, and filled gullies. This activity basically exterminated the ancient site, and serves as a cautionary tale: In 1994 not a single sherd or other cultural artifact was visible on the surface.

The Haymana Region may have been filled with small farming village communities in the Early Bronze Age. Preliminary survey of a small part of the survey area has accounted for nine sites of this period, three of which are located in close proximity to Gavurkalesi (Lumsden and Temizsoy 1999). To date, with the possible exception of Samutlu, no Early Bronze Age site is larger than 1–2 hectares, and many are smaller. Small tells are located adjacent to springs or other water sources on the high plateau or on terraces that flank narrow valleys. Smaller sites, with no evidence for mounding, are located on more isolated terraces overlooking gorges.

Middle and Late Bronze Age

Use of the Gavurkalesi hill may have spanned most of the 2nd Millennium B.C. Some of the pottery from this period collected from the surface has a relatively thick slip, highly polished, and sometimes of a purplish color, which may indicate that some type of occupation, or use, of the hill began as early as the Old Assyrian Colony Period, in the early centuries of the 2nd Millennium. This would not be surprising; just 12 kilometers away, at Külhöyük, there is a settlement from this period (Mermerci 1994; Ertem 1995) (Fig. 3). Külhöyük commands a view up the broad valley that leads towards Ankara and is strategically located to control entrance through the eastern “gate” of the Haymana Region. It seems reasonable

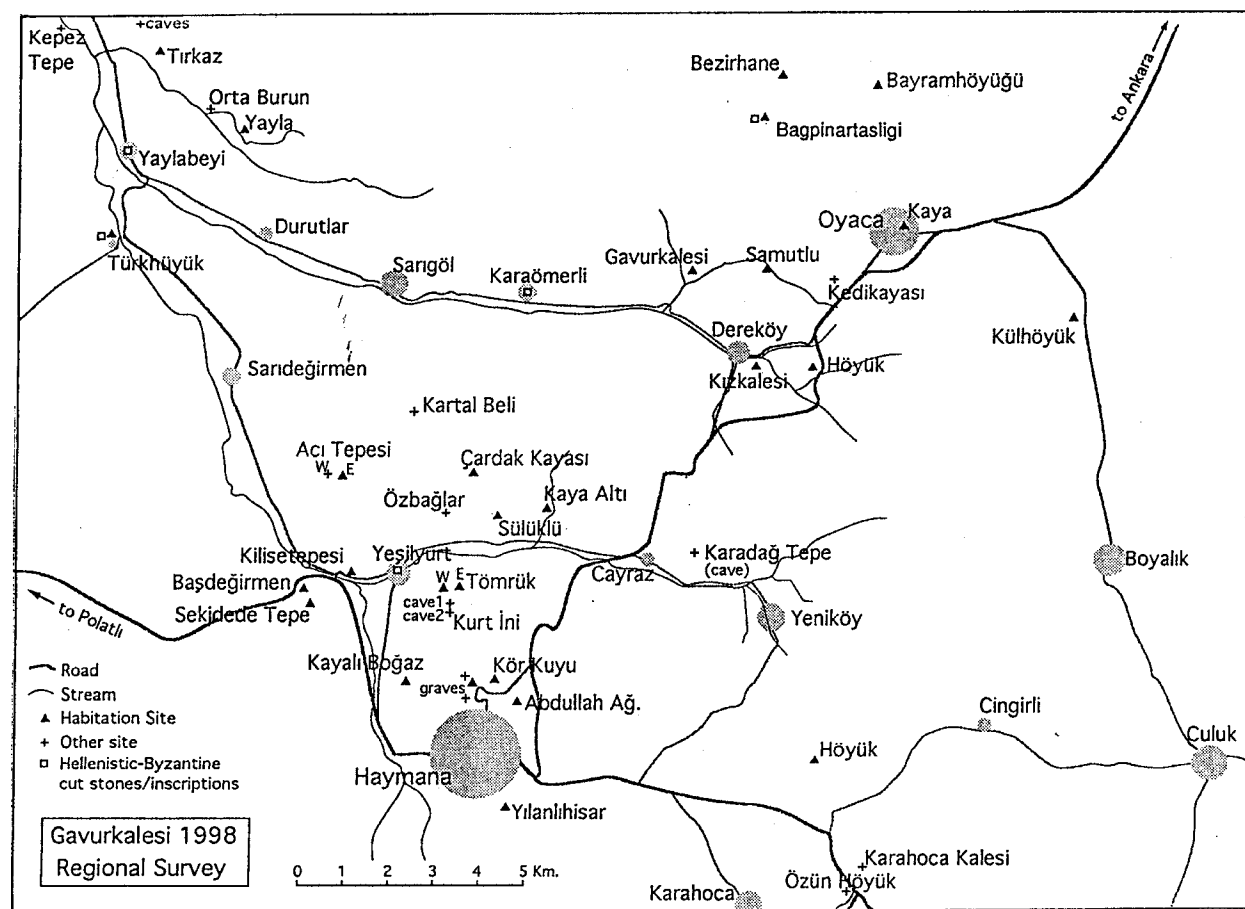


FIGURE 3. Map of the Regional Survey Area.

that Gavurkalesi and Külhöyük may already have been connected in some way in the Old Assyrian Colony Period (see Mermerci 1994; Ertem 1995).

The visible elements on the summit of the Gavurkalesi hill, however, which have defined the site in the literature, can be securely dated to the Hittite Period (ca.1600–1200 B.C.) (Figs. 2 and 4). Von der Osten's report from his season in 1930 has set the parameters of discussion for this period at the site. The reliefs on the face of the limestone outcrop clearly represent three deities in Hittite style (see Börker-Klähn 1982; Kohlmeyer 1983). Two striding male deities, approximately 3.5 meters in height, and in short kilts and horned crowns, face a seated deity less easily defined, but which is usually described as a female (Fig. 5). The massive structure atop the outcrop is constructed of cyclopean masonry similar to that found in the walls at the Hittite capital, Hattusa. The andesite stone used in this structure was acquired approximately 3km. away at Kedi Kayasi, where there is ample evidence for quarrying (see Fig. 3).

Von der Osten envisioned the Hittite Period monument at Gavurkalesi as an isolated one, unaccompanied by a settlement. He suggested that the cyclopean monument was a simple retaining structure, and that the chamber in the north face was actually the entrance on to the bare summit—one would have clambered through a hole in the back wall and up a staircase he found directly behind the chamber (see von der Osten 1933: 73 and Fig. 70) (see Fig. 6)—where cultic activities might have taken place on the smoothed-off summit of the bedrock. He also suggested, hypothetically, that access to the reliefs would have been by

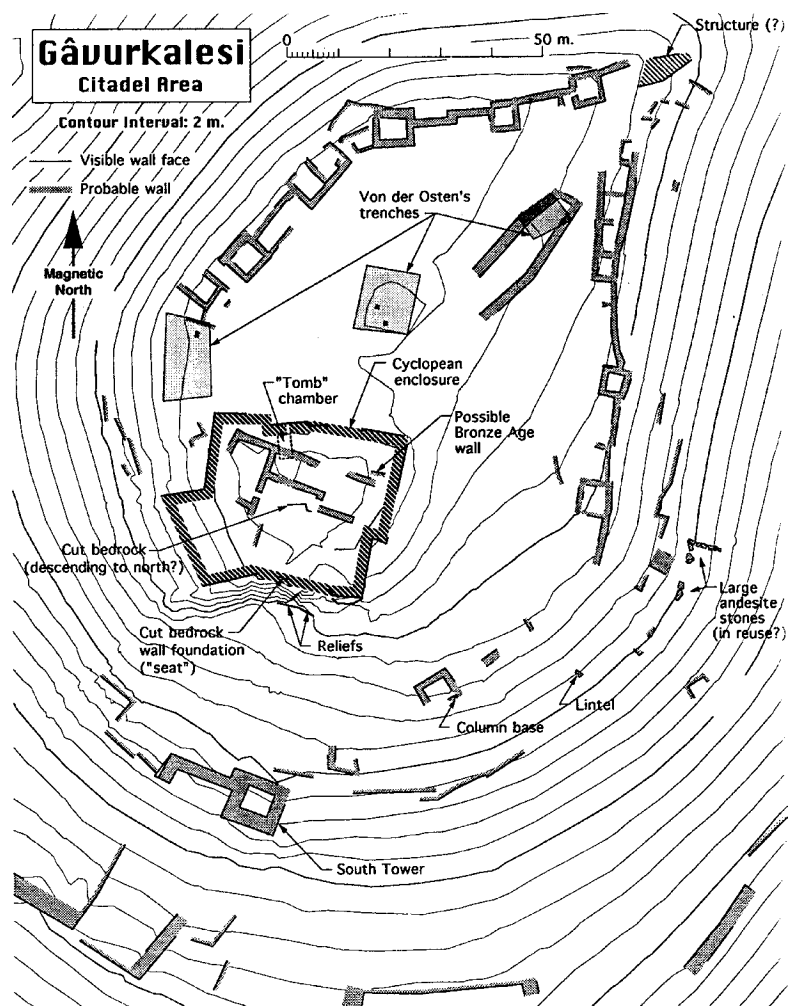


FIGURE 4. (left) Plan of the surface architecture on the summit of Gavurkalesi.

FIGURE 5. (below) Reliefs at Gavurkalesi (after Kohlmeyer 1983: Fig. 16).



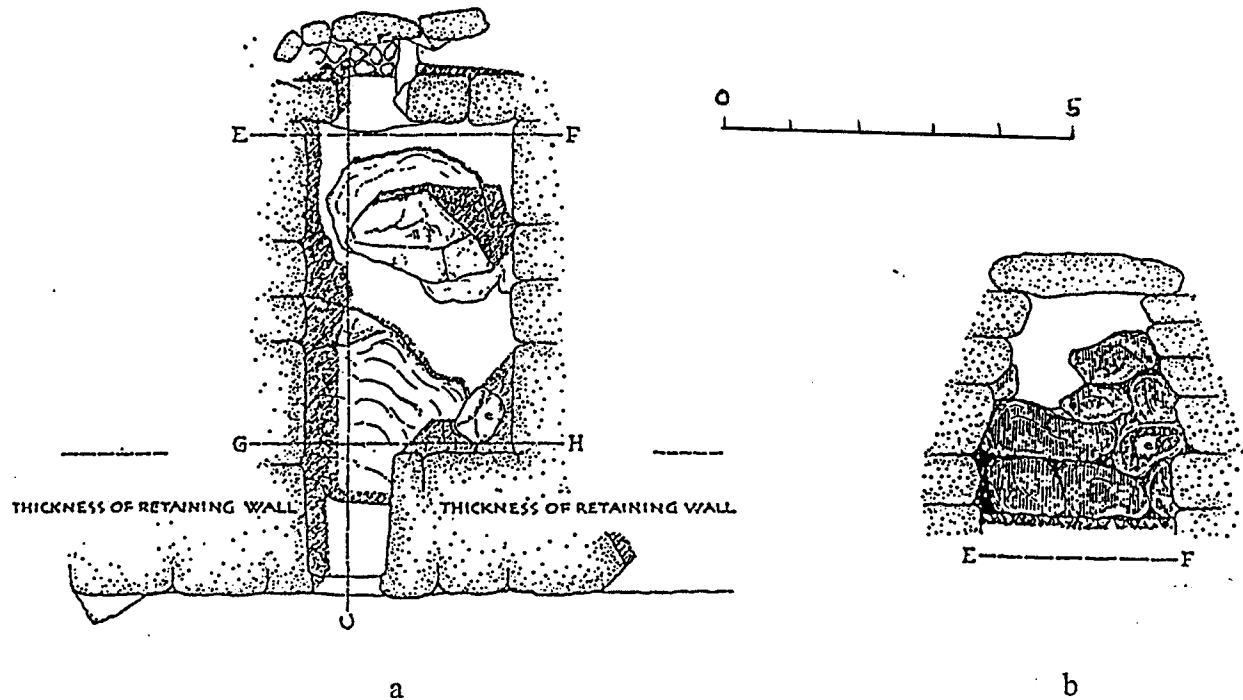


FIGURE 6. Von der Osten's plan of the chamber (a) and of the back wall of the chamber (b) (after von der Osten 1933: Fig. 70).

means of a "Processional Way" supported by a retaining wall that extends around the eastern slope of the hill to two towers directly below the reliefs, which, in turn, would have supported a hypothetical ramp that would have led to the reliefs (von der Osten 1933: 77 and Figs. 57–76).

Our own work has led to some divergences from this long-held reconstruction of the Hittite monument. First, it should be noted that the present morphology of the hill, with its flat and steep-sided summit behind the cyclopean structure and fairly level terraces midway down-slope on the western, southern and eastern sides, dates mainly to the 1st Millennium B.C. as a result of Phrygian Period settlement activities and fortification construction (Lumsden 2001: 120) (Fig. 7). Secondly, apart from the cyclopean structure above the reliefs, all of the other architectural elements visible on the surface most probably date to the Phrygian settlement. And, thirdly, the massive scale of the Phrygian construction work, especially on the summit, has either destroyed elements of the Hittite site other than the shell of the cyclopean structure, which was reused in the later settlement, or has made it extremely difficult to investigate the earlier period.

While von der Osten's Hittite Period processional road and ramp may have been incorporated into the later settlement, it seems more likely now that they were integral parts of the elaborate fortification system constructed in the Phrygian Period. The retaining wall of the "processional way" is connected in the southeastern slope to the upper wall and to a huge structure, probably a tower. The "ramp towers"—in fact, there is evidence now for only one tower—are connected to a wall that moves up the hill, perhaps as far as the western corner of the sheer face of the bedrock (Figs. 2 and 4). The monumental masonry of the tower, constructed of limestone rather than andesite, as claimed by von der Osten (1933: 77), is not fitted together in the manner of the Hittite Period structure above the reliefs. The tower



FIGURE 7. View of Gavurkalesi from the west.

masonry seems closer to that of places like Göllüdag, Hisarcik and other centers to the southeast in the early centuries of the First Millennium B.C. (see Bittel 1986: 106–108).

It transpires that the cyclopean structure itself includes a western extension not noted in von der Osten's plan (Lumsden 2001: 118 and Fig. 12) (see Fig. 4). Andesite architectural elements scattered about the site also may indicate that this monument was more complex than a simple retaining structure. On the southeastern slope is a large lintel stone (see Lumsden and Temizsoy 1999; Lumsden 2001: Figs. 13–14), and not far away, reused in a Phrygian Period wall tower, is a column, or statue, base (Fig. 4). Perhaps the present location of the lintel stone indicates that entrance on to the cyclopean structure, for which there is no obvious evidence, would have been located on the eastern side of the monument. Unfortunately, investigations on the summit, behind the chamber, indicate that Phrygian disturbances and constructions have probably destroyed whatever evidence there may have been for possible Hittite period buildings on top of the cyclopean structure. However, footings cut in the bedrock behind the back wall of the chamber, and parallel to it, may indicate that a building with the same orientation as the chamber and the cyclopean structure would have stood atop the summit, above the chamber and the reliefs, in the Hittite Period.

The chamber, which measures approximately 5 by 3 meters, is capped by monolithic blocks on the corbel-vaulted walls in a manner similar to postern gates at the nearby site of Külhöyük and at Alishar (Mermerci 1994: 18, Figs. 5–6; von der Osten 1937: 7, Figs. 26–27), but unlike those at Bogazköy-Hattusa and Alaca Höyük (see Bittel and Naumann 1952: Fig. 39; Neve 1982: 39–40 and Fig. 22; Kosay and Akok 1966: 124–5 and Fig. 89). In cleaning out



FIGURE 8.

the debris that had accumulated in the chamber since 1930, a raised platform, which was somehow missed in the earlier excavations, was revealed towards the back wall (Fig. 8). The platform, measuring 185 by 110 cm. and 30 cm. in height, is cut out of the bedrock. This feature would seem to reinforce the notion that the chamber was, at least initially, a special-purpose room rather than a passageway on to the summit, as proposed by von der Osten.

Excavations on the summit and directly in front of the reliefs indicate that the Gavurkalesi hill would have looked somewhat different in the Hittite Period than it looks today. On the summit, in a deep trench just 30 meters away from the chamber (F6 in Fig. 9), Phrygian deposits reach a depth of 5 meters below the chamber threshold, and at the northern edge of the summit (F-G3 in Fig. 9) Phrygian deposits continue beyond this depth. In addition, excavations in front of the reliefs indicate that any surface connected with them was much lower than that proposed by von der Osten (see von der Osten 1933: Figs. 60–61; Lumsden and Temizsoy 1999). Together, these investigations suggest that the reliefs and the cyclopean monument would have been much more highly elevated above steeper slopes of the hill than is evident today.

Other evidence for Hittite occupation at Gavurkalesi includes abundant polished, red-slipped potsherds spread about the slope of the hill, primarily on its southern side (Lumsden 1995: 271 and Fig. 9). This type of ceramic has not been found in stratified context in the excavations carried out on the summit and the terrace below the reliefs (Fig. 2, South Terrace/ST on Fig. 9). In the deposits on the sloping bedrock at the bottom of the test trench on the summit (F6), 5 meters below the chamber threshold, the ceramics are primarily the plain

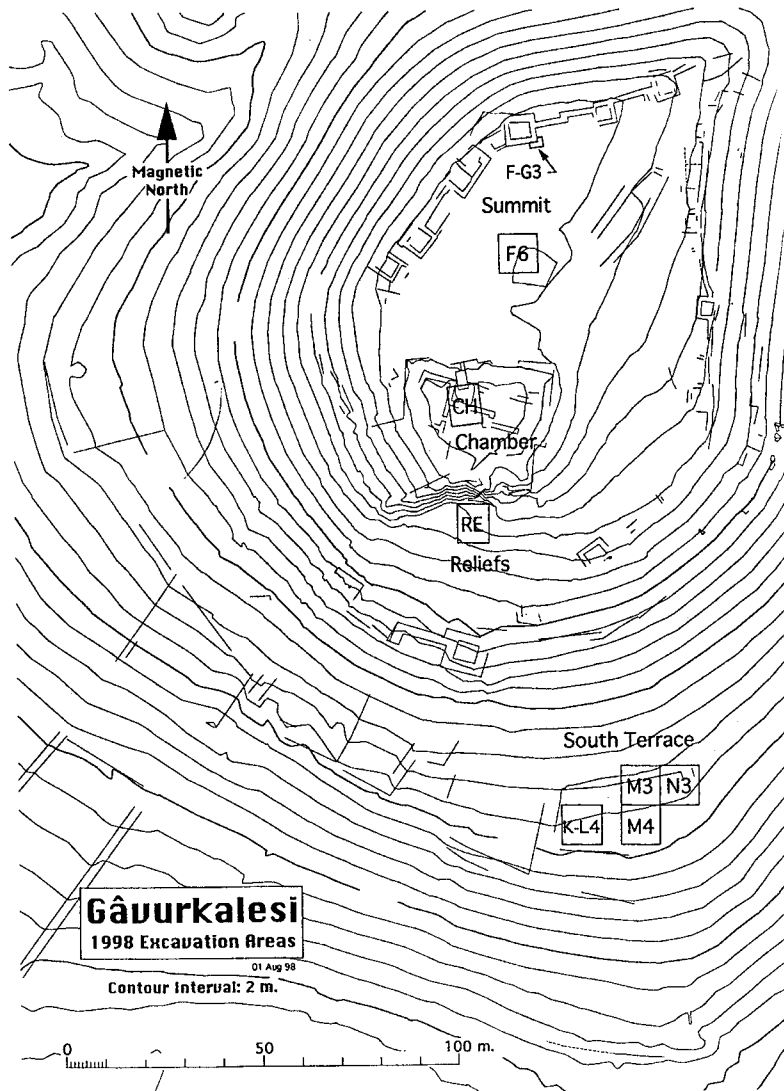


FIGURE 9. Location of the excavation units of the 1998 season.

buff ware that characterizes the end of the Hittite tradition at Bogazköy-Hattusa and Gordion (see Müller-Karpe 1988; Parzinger and Sanz 1992; Gunter 1991: 28; Henrickson 1994: 105–6; Lumsden and Temizsoy 1999).

Off the Gavurkalesi hill the only evidence for Hittite occupation comes from a single terrace directly across the valley from the reliefs (SVS1 on Fig. 6 in Lumsden 2001). Here, surface sherds, including common red-slipped types, as well as cooking pots and storage vessels, suggested occupation contemporary, perhaps, with the Hittite monument. Regretably, geophysical sub-surface testing, undertaken in 1998, revealed very little. Perhaps here, and elsewhere in the plough zone where sub-surface testing proved inconclusive, agricultural activity has caused too much damage to subsurface architectural elements for them to be detected. Still visible remnants of stone walls/foundations, and documentation for the removal of wall fragments by farmers since 1993, indicate that structures did exist on the terraces surrounding the Gavurkalesi hill.

The difference between the surface pottery and that from the deep trench on the summit raises questions about the history of the Hittite Period site. The scattered red-slipped ceramics on the slopes of the Gavurkalesi hill presumably derive from the monumental struc-



FIGURE 10. Excavation unit F6 on the summit. The two substantial surface walls are in the distance, against the section. The rectilinear pit house is in the middle distance, and the oval pit house that cuts through it is in the foreground.

ture on the summit and the area around the reliefs; none of the buff ware that characterizes the deep trench on the summit was found on the slopes. A possibility is that the main use of the place and its monuments dates to fairly early in the imperial period (perhaps beginning already in the Old Kingdom Period?), as represented by the red-slipped ware on the surface below the reliefs and on the terrace directly opposite them. Stylistic criteria and the lack of an accompanying inscription may place the reliefs early in the Hittite sculptural sequence (see Börker-Klähn 1982: 92, 95; Canby 1976: 35), a dating which would fit well with an early foundation for the monument at Gavurkalesi. The buff ware deposits down the original slope from the chamber threshold may represent a time towards the end of the empire in the 13th century when the arrangement of settlement around the monument would have changed, or, perhaps, when the presumed cultic function of the place would have ceased.

Patterns of settlement in the surrounding region during the Middle and Late Bronze Ages seem to change dramatically from that of the preceding Early Bronze Age. Although future surveys will assuredly augment this picture, at present, in those areas surveyed, there is possible evidence for only two sites during the Middle Bronze Age/Old Assyrian Colony Period (Gavurkalesi and Kaya Alti), and sure evidence for only three sites during the Middle-Late Bronze Age/Hittite Period (Gavurkalesi, Oyaca Kaya, Kilisetepesi), in addition to Külhöyük, as noted above, just outside the eastern entrance into the Haymana Zone (Fig. 3). In the eastern part of the area, in addition to Gavurkalesi, Külhöyük commands the eastern



FIGURE 11.

“gate”. Within this narrow entrance into the rough Haymana zone is a second Hittite site atop the sheer rock outcrop of Oyaca Kaya (see Lumsden and Temizsoy 1999). Samutlu, the Early Bronze Age site at the east end of the Gavurkalesi valley was not occupied in these periods.

At the western end of the survey area on a hill above a narrow gorge near the village of Yesilyurt, the site of Kilisetepesi guards the western “gate” through which the road today leads to Gordion, 60 kilometers to the northwest (see Lumsden and Temizsoy 1999) (Fig. 3). In the northwestern corner of the survey area, at Türkhöyük, is the largest tell-site discovered so far, at a height of approximately 20 meters, with what seems to be an attached lower terrace. This place controls a relatively large valley and the crossroads that pass through it, and it too may have been occupied in the Hittite Period (Fig. 3). Other possible evidence for Hittite Period settlement is confined so far to what may be much reduced occupations of a few of the Early Bronze Age sites.

If the notion that the Haymana Area was thickly populated with small agricultural villages in the Early Bronze Age can be extrapolated from the very preliminary survey results, then there seems to have been a major settlement decline in the Middle Bronze Age. The reasons for this remain unclear, although reduction in settlement from the Early Bronze Age to the Middle Bronze Age is also characteristic of areas surveyed to the south of Haymana, in the current Konya Plain Survey (Baird 2000: 15). The evidence suggests so far, at least, that the concentration of population in fewer, but larger, centers in the Konya Plain

in the Middle Bronze Age is not found in the Haymana Region. Perhaps populations from as far away as Haymana were being lured south of Tuz Gölü to the new urban centers of the Middle Bronze Age Konya Plain.

In the main, the Late Bronze Age/Hittite pattern of settlement in the Haymana Region seems to approximate that described by Roger Matthews for the mountains to the north, in Paphlagonia (Matthews 2000: 19–20): that is, strategic control of the main access routes into and within a difficult terrain that served as a border zone. Early forms of the red-slipped ware at all of the Hittite sites (the buff ware was not found at any site other than Gavurkalesi), and the location of these sites, may suggest capture and control of this area, perhaps beginning already in the Old Kingdom Period at the end of the 17th Century B.C. and continuing in the early phases of Empire Period expansion at the beginning of the 15th cent. B.C., as a buffer zone directly across the Kizilirmak from Hatti (for the historical geography of Anatolia west of the Kizilirmak and the history of Hittite expansion against the Arzawa states in the west, see Heinhold-Krahmer 1977; Bryce 1974; 1986; 1998; Hawkins 1998). In this respect, the Old Kingdom Period is much better represented at Külhöyük than the Empire Period (Temizsoy et al. 1996: 55), and this is also possibly the case for Kilisetepesi. The fortified sites in Haymana, along with Yarasli, just north of Tuz Gölü (see Fig. 1), would have controlled important routes from the Hittite heartland to the west and southwest (Mellaart 1983; 1984; Summers 1992; Dincol et al. 2000). Perhaps as imperial control was extended westwards such a role for the Haymana Region was no longer required, and the strategic sites in the area went out of use. The monument at Gavurkalesi itself, however, presumably continued in use after the “frontier outposts” had been abandoned.

Perhaps, then, a similar pattern of fortresses at strategic locations from the northern highlands in Paphlagonia, south through Ankara and Haymana, to Yarasli and areas to the west/southwest of Tuz Gölü would have formed the Hittite state’s fortified buffer zone—and control of important routes—west of the Kizilirmak (see Mellaart 1982; 1984; Bryce 1986; Dincol et al. 2000). Cultic monuments in at least parts of this zone (including that at Gavurkalesi) may also have played an imperial-religious role in these frontier locations (see Börker-Klähn 1982: 104; Mellaart 1984: 71–72). In addition, Hawkins’ recent identification of the Siyanti River, the frontier between Hatti and the powerful western kingdom of Mira, with the Porsuk River, a tributary of the Sakarya River, and his location of Pedassa, an important Hittite dependency, west of Tuz Gölü, between Polatli and Kadinhan (Hawkins 1998: 22; see also Mellaart 1982), places Haymana and Gavurkalesi within this buffer zone between the Hittite heartland and the western frontier. The Hatti-Mira frontier itself is described in a treaty between Mursili II and the king of Mira-Kuwaliya, and, although this frontier presumably was located west of Haymana, it approximates the relatively “empty” Haymana zone of the Hittite Period, contemporary with the cultic monument at Gavurkalesi. Mursili warns against building any settlements beyond the Siyanti River; if any are built they will be destroyed (Garstang and Gurney 1959: 90, 9–10; Bryce 1974). The only exception to this restriction against the founding of settlements in the frontier zone is the “Holy Place of Mashuiluwa” on the Siyanti River.

Iron Age

Even though Gavurkalesi is ordinarily discussed in the literature in terms of the visible Hittite monuments, our four seasons at Gavurkalesi have shown that the Phrygian Period site is as significant and interesting as the Hittite one. The Phrygian settlement at Ga-

gurkalesi extends for approximately 1000 meters along the valley and 500 meters from valley slope to valley slope. Settlement here is mostly on the terraces along the valley floor which form a kind of “lower town” to the Gavurkalesi hill. There is also evidence for a massive labor investment on the hill in the form of the transformation of its natural shape and the construction of walls and buildings from the summit of the 60 meter hill to its base.

The broad, level summit behind the cyclopean structure is completely artificial, and most especially on its northern side it presents a formidable prospect to any attacker. The terraces midway down slope which extend from the eastern around to the western side may also have been artificially broadened and leveled. Fortifications and terrace walls begin at least at these terraces and these walls form part of either a very elaborate terracing system, or, more probably, a defensive system—all of which seems to date to the Phrygian Period. This lower wall system is connected to one at a higher elevation by cross walls and towers. And finally the summit is encircled with a wall with fighting platforms and constructions to deflect attackers down slope (Figs. 4 and 9). Geophysics revealed a huge bastion-like structure in an unploughed zone at the northern corner of the hill which presumably would have protected this most vulnerable point in the defenses (see Lumsden and Temizsoy 1999).

Above the Hittite cyclopean structure von der Osten uncovered what he called the “mansion”, which was built over the chamber and which he dated to the Phrygian period on the basis of different construction and orientation from the earlier structure. Deposits that reach the bedrock behind the chamber and beneath the “mansion”, which are filled with Phrygian Period pottery, confirm this date. The plan of the “mansion” may be similar to that of a contemporary building at Pazarli, north of Ankara, with two wings extending from a central section (see Kosay 1941; Lumsden 1999) (Fig. 4). The eastern wing of the Gavurkalesi building is truncated; its full extension probably blocked by the smoothed off top of the bedrock. Alternatively, the western part of the structure may be a megaron-style building, with a two-room extension over the chamber.²

Excavations in one of von der Osten’s old test trenches indicate a long and complicated history of occupation on the summit in the Phrygian Period (Square F6 in Fig. 9), including alternating phases of substantial surface architecture and less substantial pit houses, which may correspond to similar sequences at Gordion and Kaman Kalehöyük (see Lumsden 1999; Lumsden and Temizsoy 1999; Sams and Voigt 1995: 375–6; Sams 1996: 437–8; Voigt et al. 1997; Omura 1995a: 315–17). The sequence begins with a pit house dug down into the deposits with Hittite buff ware and continues with another apparent phase of semi-subterranean structures. This appears to be followed by a substantial surface building with at least three successive floors of crushed limestone. This building was, in turn, cut by a rectilinear pit house with vertical indentations in its stone walls for wooden superstructure supports, similar to a type of building known from Phrygian levels at Bogazköy and, perhaps, Gordion (Lumsden and Temizsoy 1999; Neve 1982: 145, Fig. 75; Voigt et al. 1997: 10). It seems probable that this rectilinear pit house was followed by another phase with substantial surface architecture, which was destroyed by a later phase of ovoid pit houses that also cut into the rectilinear pit house (Fig. 10). Later phases are represented by a possible pit house with a stone pavement and, finally, by narrow, scrappy walls near the surface. Subsurface testing indicates structures, probably of the ovoid pit house phase, on other parts of the summit (see Lumsden 1999).

2. A proposal made in a seminar by my student Sven Warburg.

Excavations also partially uncovered buildings which had been revealed in geophysical testing on the largest terrace below the reliefs (Fig. 2, ST on Fig. 9). The sequence here does not seem to have been as long or as complicated as that on the summit. It begins with pits dug into the lime deposits that form the terrace. Although it is presumably this material that was used for the substantial flooring in buildings on the summit, the pits are all flat-bottomed and perhaps served as storage facilities for buildings not identified. The next phase on this terrace seems to be represented by a rectilinear pit house dug into the lime pits. This is followed by a phase, or phases, of substantial surface buildings, which resemble megarons (see Lumsden and Temizsoy 1999). There are at least three of these buildings represented and their orientation follows that of the terrace itself. At the completion of the 1998 season it had not been ascertained if they were contemporary or represented successive building phases. The last phase here is represented by what seem to be enclosure walls that extend along all these terraces and whose mounding can be detected on the surface. The entire sequence on the South Terrace apparently dates to the Phrygian Period.

Perhaps the sequences on the summit and the terrace can be connected with the rectilinear pit house phase in both, which might suggest that the second substantial surface building level on the summit would be contemporary with the large buildings on the terrace. Clearly, Phrygian settlement at Gavurkalesi began on the summit and the depth and complexity of building levels indicate a long period of occupation. While there is some indication for earlier Iron Age occupation at Gavurkalesi, the major periods of settlement in the 1st Millennium appear to date to the Middle and Late Phrygian Periods (ca. 700–330 B.C.). Even though the ceramic inventory follows the major shape categories from the Early Phrygian Period (ca. 8th cent. B.C.) at Gordion, both ware and finish of the Gavurkalesi material mainly suggest the later periods (see Lumsden and Temizsoy 1999).

A 7th century date for the initiation of a fairly significant labor investment at Gavurkalesi may fit well with the recent redating of the Middle Phrygian rebuilding of the citadel at Gordion, and the expansion of its lower town, to the early 7th century (Voigt et al. 1997: 4, 32). On the other hand, the enclosure walls on the summit, at least, were not built until after the site had already been long occupied. The deep trench (F-G3) on the northern edge of the summit revealed that, below the enclosure wall at this spot, there were several meters of Phrygian Period garbage dump, which probably had been thrown over what was then the side of the natural hill.

Function

There seems no doubt that Gavurkalesi was a sacred place in the Hittite Period. It has many of the physical properties that were foci for Hittite ritual activities: it is elevated, with a massive stone outcrop, and in close association with both a stream and a spring. It seems possible that it may have been a place associated with cultic activities at least as early as the Old Assyrian Colony Period.³ The role of the Hittite Period monument at Gavurkalesi in the establishment and control of a political buffer zone has already been suggested above (see also Lumsden 2001). In addition, it was probably located on an important route that connected the west, and places like Gordion, with the Hittite heartland (Garstang and Gurney 1959: 77; Börker-Klähn 1982: 257).

3. There is not space here to deal with proposals for the ancient name of Gavurkalesi and the surrounding Haymana Region. See Ertem 1995; Mellaart 1982; 1984; del Monte et al. 1978; del Monte 1992 (Ka/isiya and Salatiwara); Forlanini 1977 and TAVO Map BIII6.

Gavurkalesi was clearly an imperial project, as indicated by the style of its reliefs and its architectural forms, and by the labor needed to create it. It is assumed here that the reliefs and the cyclopean structure with its chamber were components of a single, planned monument. Evidence for a resident community contemporary with the Hittite monument at Gavurkalesi includes many examples of potsherds from storage vessels and cooking pots on the surface of the slope below the summit. The ceramics on the surface of the terrace across from the reliefs noted earlier probably also indicate a location for a small settlement associated with the cultic monument. In addition, a fragment of a pierced clay crescent-shaped object (Fig. 11), an artifact found at many sites in Anatolia, most commonly in the Middle Bronze Age, probably indicates some type of administrative or accounting activity at the site (for these objects and their possible function, see Alp 1968; Kull 1988; Vogelsang-Eastwood 1990; Weingarten 1990).

Many scholars have proposed that the situation at Gavurkalesi of an elevated stone outcrop surmounted by a cyclopean structure with a chamber supports a role for the place as a royal funerary monument, a “Stone House”, É.NA₄, or “Everlasting Peak”, ^{NA⁴}*hekur* SAG.US (see Güterbock 1967: 81; Naumann 1955: 58, 408; Bittel 1981: 67; Popko 1995: 141; see for the royal funerary monument van den Hout 1994; Börker-Klähn 1995). Other proposals for a royal mausoleum include the rock outcrop and associated inscription and building at Nisantas in Hattusa (and, possibly also Sarikale and Yenice kale), and Chamber B at Yazilikaya (Bittel 1981: 67; van den Hout 1994: 50–51). Such monuments apparently could also be located outside the capital (van den Hout 1994: 49, 61), and in Cilicia, Sirkeli, which shares certain features with Gavurkalesi (reliefs, association with water, and a chamber with a raised pedestal on a stone outcrop), may be a candidate (see Hrouda 1998).

Other “stone houses” or “everlasting peaks”, with associated personnel and buildings, were dedicated to the worship of deities rather than as mausoleums (Imparati 1977; Popko 1995: 154). Two features may suggest this role for Gavurkalesi rather than as a funerary monument. While the chamber, as a burial place, is always advanced as an argument for the funerary character of the monument (see Kohlmeyer 1983: 44), it should be emphasized that it is on the “outside” of the monument, a location not usually associated with the actual burial place in royal tombs. Also, while the reliefs at Sirkeli depict a Hittite king, Muwatalli II, which at least invests the site with royal associations, the reliefs at Gavurkalesi appear quite clearly to depict deities (see Fig. 5). Even so, in the context of a funerary monument, it has been suggested that the Gavurkalesi reliefs represent the dead and now divine king “becoming a god” (Börker-Klähn 1982: 96), or that they are associated with the royal funerary ritual (Kohlmeyer 1983: 48).

Perhaps, though, these figures simply represent a typical Anatolian divine triad of mother, child, and father (see Emre 1971; Popko 1995: 90), with the main figure to whom the monument would be dedicated being represented by the seated female figure. The association with a spring may suggest an identity as a goddess of the underworld (Lelwani?), or the Sun Goddess of Earth in her role as a earth/mother goddess. Mother goddess figures could be associated with springs and depicted seated, and the Sun Goddess of Earth was paired up with a Storm God of Heaven and was the mother of a young Storm God at places like Nerik and Zippalanda (Popko 1995: 110–111, 145–145). Alternatively, if Gavurkalesi is in Luwian territory already across the Kizilirmak from the Hittite heartland, the deities may represent a local Luwian divine group. Although little is known about the deities worshipped west of the Kizilirmak (Singer 1994: 93), a mother goddess headed many local Luwian pantheons (Popko 1995: 94), and perhaps this is the main figure in the relief group. In this case, the

foundation of Hittite Gavurkalesi perhaps would have represented a common imperial strategy in the reconfiguration of a local cult that both legitimized and visually expressed imperial authority (see Gorny 1995: 69–71). This function might have been most significant in a frontier zone, a role suggested above for Haymana.

If the chamber did not serve as a burial place, it remains unclear what role it may have played in the cultic monument. In a funerary context it has been suggested that it would have served as the “underground home” of the soul of the dead king (Börker-Klähn 1982: 97). If, however, Gavurkalesi did not serve as a mausoleum, but rather as a cult center mainly for the worship of a local mother goddess, then the chamber would have served other functions. The chamber is situated exactly in line with the seated figure, so that it seems somehow connected specifically to her. Caves are often associated with the worship of mother goddesses in Anatolia and Greece in many periods (Berndt-Ersöz 1998: 93, 97; Parker 1967: 26–27), and perhaps the chamber at Gavurkalesi, built into a crevice of the bedrock, could have served as an artificial “cavern”.

Although it was in close proximity to a stream and a spring, the chamber itself was apparently not directly connected with a water source. Still, perhaps another, possibly less likely, function for it would have been similar to that suggested for Chamber 2 at the Sacred Pool Complex at Südbürg, in Hattusa (see for this feature Neve 1993). This installation has been identified as a ^dKASKAL.KUR, a “divine earth-road” (Hawkins 1995: 44–45), not in its role as an underground water course (see Gordon 1967), but as a recipient of libations in a cultic context (Hawkins 1995: 45). In this context, then, a possible function for the chamber at Gavurkalesi, similar to that suggested for Chamber 2, would have been as an artificial entrance to the underworld.

It has already been argued above that the discovery of the raised pedestal suggests that the original function of the chamber was as a special-purpose room rather than as a way to get on to the summit of the bedrock. This would also seem to indicate that the irregularly-shaped hole in the back wall of the chamber was not an original feature, but was due to later destructive activities at the site, or reuse of the chamber as a passageway (see Fig. 6b). A related problem is the stairway that von der Osten describes finding behind the back wall of the chamber (see Fig. 6a). This feature no longer exists, however von der Osten describes it as an “open stairway [that] evidently led upward to the surface of the knoll (at the same level as the tops of the roof blocks)” (von der Osten 1933: 73). According to von der Osten’s description and his plan, this feature was just wide enough for a single person, at about 50 cm. width, and it only connected the area directly behind the chamber with the summit of the bedrock. The plan does not seem to indicate, for instance, that the stairway led to an area further in to the bedrock. A photograph in the report (von der Osten 1933: Fig. 72), which seems to show part of the retaining wall of the staircase through the hole in the back wall of the chamber, indicates that this part of the feature is constructed in “cyclopean-style”, with large, irregularly-shaped stones fitted together, and so it should belong to the Hittite Period monument. If this feature was an integral part of the original monument, then one must find an explanation for the function of a chamber (“cavern”?, “cella”?) and an associated stairway that led from the surface of the bedrock down to a space directly behind either the solid back wall of the chamber, or, perhaps, a back wall pierced by a hole much smaller than the large irregular open space that now characterizes it (see Fig. 6b).

As noted above, the Gavurkalesi hill in the Phrygian Period was surrounded by structures on the terraces on both sides of the narrow valley floor. There seem to have been many buildings on the summit of the hill and the terraces midway downslope, and these were en-

circled by fortification and terrace walls that connected the summit to the base of the hill. The fortification walls on the summit, at least, were constructed after the site had been occupied for some time. Perhaps these fortifications represent a new role for Gavurkalesi as a station on the Persian Royal Road—following the old Hittite route—between the Kizilirmak River and Gordion (see Müller 1994: 26–27; however, for a different route for this road see French 1998).

The initial major use of the site in the Phrygian Period, however, may have been connected to its ancient role as a cult center. There is some evidence for Phrygian reuse of Hittite sacred places (Popko 1995: 188), and the seated female figure, especially, might have seemed familiar to new groups settling at Gavurkalesi, and could have been easily incorporated into their religious belief systems. The main deity worshipped by the Phrygians was a mother goddess figure, Kybele (Popko 1995: 188). Kybele, who is dressed in ancient Anatolian attire, could be depicted seated or standing, and at times her worship is associated with mountain tops (Mellink 1981: 98, 100, 102; Popko 1995: 188).

Perhaps the other deities on the rock face at Gavurkalesi could also have been associated with Kybele and thus have contributed to the suitability of the place for her cult for Iron Age newcomers. The beardless deity facing the seated figure might have been associated with the young god Attis, Kybele's companion. And in Hellenistic and Roman times, at least, a third deity, a storm god, was also worshipped by Phrygians (Mellink 1981: 104; Popko 1995: 191).

If the notion can be entertained that Gavurkalesi may have served as a cult center for the worship of Kybele, at least initially, in the Phrygian Period resettlement of the site, what function might the chamber have fulfilled in such a reconstruction? If the chamber and associated stairway continued in use, the stairway would have been entered from the central room in the "mansion" (see Fig. 4). A very hypothetical proposition put forward here is that the chamber/stairway unit might have formed the location of a sibylline oracle.⁴ A person within the stairway area presumably could be heard, but not seen, by those in the chamber, which apparently was a characteristic at least of the oracle at Delphi, and there and elsewhere the arrangement seems to have been made up of two separate but communicating chambers (Flacelière 1965: 41–42, 45–47). Also the descent from a temple into an underground chamber was characteristic of many ancient oracles (Flacelière 1965: 29–30, 43, 46; Parke 1967: 78, 138).

It seems that the mother goddess and earth goddess could be interchangeable in antiquity, and important features of some earth goddesses connected with oracles were a sacred stream and a cavern (Berndt-Ersöz 1998: 97). Although little is known about the Kybele cult in the Phrygian Period, in later periods underground chambers are mentioned in connection with her cult, and oracles are connected with the Kybele cult in the Hellenistic and Roman Periods (Berndt-Ersöz 1998: 93, 96).

In fact, Phrygia is closely connected to the figure of the sibyl and to sibylline oracles in antiquity. The sibyl, characterized by inspiration of ecstatic prophecy, may have had an origin in western Anatolia before the arrival of the Greeks (Parke 1967: 49–51). Phrygia stands out in ancient accounts of the origin of the Delphic sibyl, and a list of sibyls includes a Phrygian sibyl who prophesied at Ancyra (Parke 1988: 30–31, 113, 160). Oracular activity even played a role in a Christian sect, Montanism, which started out in a remote part of Phrygia around 150 A.D. (Parke 1988: 159–160; Berndt-Ersöz 1998: 98).

4. A suggestion made to me by David Stronach on a visit to Gavurkalesi with Geoff Summers in 1998.

A particular type of rock-cut monument in western Phrygia has recently been associated with oracles (Berndt-Ersöz 1998). Five of the house, or niche, facades in the Phrygian Highlands, between Eskisehir and Afyon, are accompanied by a vertical shaft cut into the bed-rock behind the facade. The shafts are just large enough for a single person and end directly behind the niche in the facade, to which it is connected by a hole. Although quite different in appearance, the suggested function of the shaft as a place for an oracle/medium to communicate to a person before the niche (Berndt-Ersöz 1998: 98) may have been the same as that proposed here for the chamber-stairway unit at Phrygian Gavurkalesi. Perhaps there is no coincidence in the correlation between the suggested date for the shaft monuments (between the end of the 8th and the first half of the 6th Centuries B.C., Berndt-Ersöz 1998: 87), the flourishing of oracles in antiquity in the 8th and 7th centuries (Berndt-Ersöz 1998: 97), and the date suggested above of the 7th century for the foundation of the main settlement phase at Gavurkalesi in the Iron Age.

The apparent cyclopean-style masonry of the supporting wall of the stairway suggests that it formed a unit with the chamber already in the Hittite Period. Although there is a long tradition for divination and oracular activity in Hittite cultic practices, there is very little evidence for inspired divination, such as that which characterized sibylline oracles (Hoffner 1992: 103). However, there are a very few attestations to prophetic activity, to a “speaker of divine messages” (Beckman 1999: 533). These figures were “possessed by a god” and were said to convey their message through speech, in other words, an ecstatic (Hoffner 1992: 103; Beckman 1999: 533). Perhaps it is not too farfetched to postulate that the rich oracular tradition in the Iron Age in Anatolia west of the Kizilirmak would have had a more ancient foundation in the Bronze Age.

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Şaraga Höyük 1999 Salvage Excavations

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Abstract

The “Salvage Project of the Archaeological Heritage of the Ilisu and Carchemish Dam Reservoirs” salvage excavations were carried out during June-August and November of 1999 in Şaraga Höyük. Şaraga Höyük lies on the west bank of the Euphrates, 800 m. east of the Keleklioğlu village, 13 km south of Birecik and some kilometers north of Carchemish. The Mound measures 200 m from north to south, 150 m from east to west, and is 22 m high.

1999 year excavations were carried out in two sections: South Trenches and North Trenches. Architectural levels of Late Uruk, Early Bronze Age, Middle Bronze Age, Late Bronze Age, Iron Age, and Medieval Ages were identified. Due to the limited time, works especially strongly emphasised on second millennium B.C. levels. A monumental building and intramural, simple inhumation and stone built graves yielded important second millennium B.C. material which is not known very well in the region.

Unfortunately Şaraga Höyük is the first victim of the Carchemish Dam. During the last days of excavations the water of the Dam covered almost the whole Mound. Although the excavations lasted only three months, the knowledge that we collected from the excavations filled the gap in our knowledge of the ancient Carchemish area.

As part of the “Salvage Project of the Archaeological Heritage of the Ilisu and Carchemish Dam Reservoirs” coordinated by The Middle East Technical University’s Center for Research and Assessment of the Historic Environment, preliminary investigations in Şaraga Höyük started in 1998¹ and salvage excavations were carried out during June–August and November of 1999.²

For many years, the only reference for the cultural and historical characteristics of the region has been the results of the Carchemish excavations that was conducted in the beginning of the 20th century. Algaze’s extensive surface survey in the dam reservoir area had

1. Sertok and Ergeç 1999b.
2. The excavation team under the co-direction of archaeologist Kemal Sertok (Gaziantep Museum) and Ass.Prof.Dr. Fikri Kulakoğlu (Ankara University, Faculty of Letters) consists of Dr. Filomena Squadrone (University of Rome ‘La Sapienza’), And Atasoy (Research Assistant, Ankara University, Faculty of Letters), Archaeologist Filiz Karabacak, (M.A. student, Istanbul University, Faculty of Letters), Archaeologist Sabahattin Ezer, (M.A. student, Istanbul University, Faculty of Letters), Archaeologist Deniz Ya_in, (M.A. student, Istanbul University, Faculty of Letters), Archaeologist Murat Süslü (Antakya Museum), Emrah Çankaya (Student, Ankara University, Faculty of Letters), Umut Alagöz (Student, Ankara University, Faculty of Letters), Burcu Burhan (Student, Istanbul University, Faculty of Letters), Gülgün Dervi_ (Student, Istanbul University, Faculty of Letters) and Geomorphologist Dr. Catherine Kuzucuoğlu (CNRS, Paris).

provided us with general information and revealed the need for comprehensive excavations in the region that would enlighten the chronological and cultural chain of this area. In the light of this argument and preliminary surveys in the region, Şaraga Höyük was selected as a site to investigate.

Location and the mound

Şaraga Höyük lies on the west bank of the Euphrates, 800 m east of the Keleklioğlu village, 17 km south of Birecik and 10 km north of Carchemish. The village is reached by an asphalt road that runs parallel to the river after leaving the Gaziantep-Urfa highway at Birecik. To reach the mound from the village one must walk through the fields. Gre Vrike, Akarçay Tepe and Akarçay höyük that are part of the same salvage project lie just across Şaraga Höyük, on the eastern bank of the Euphrates.

The valley floor in this region, formed by the Euphrates cutting the ancient Eocene-Miocene limestone foundation, is over 2 km.³ The filling of the valley floor during the Late Pleistocene and Holocene has produced the broad fertile alluvial plain that exists today. The preliminary results of the geomorphologic research conducted by C. Kuzucuoğlu has shown that the plain bounding Şaraga Höyük on the West was formed by the Euphrates whilst the mound was occupied, probably in the 3rd millennium B.C., and the river was 6 m higher than its present bed. The similar geomorphologic formation that developed in the Early Bronze Age at Jerablus Tahtani, 5 km south of Carchemish, was observed.⁴ When the river later shifted to its present bed, it eroded the Northeast side of the mound, exposing once more the early layers. During the survey conducted at the site in 1998, pottery of the early periods was found nowhere else on the mound but on the eastern slope.⁵ We now understand why the lower layers of the mound are covered by alluvium. To reach a conclusion both of the geomorphologic changes that have been wrought by the Euphrates over the centuries, and of the influence of these changes on the settlements in this region, we eagerly await the results of Kuzucuoğlu's research.

Şaraga Höyük measures 200 m from north to south, 150 m from east to west, and is approximately 22 m in height. The formation of the mound is a conical summit covering a relatively small area and a broader flat area extending towards the South. A small stream running from the West turns southwards before emptying into the Euphrates, giving the mound a peninsular appearance. The mound must originally have been round in form, but it now has an oval appearance as a result of its west side having been cut and straightened for cultivation purposes and its Northeast side, eroded by the Euphrates, having a stepped incline. Apart from the natural section created by the Euphrates on the Northeast the whole of the perimeter of the mound has been cut in order to gain agricultural land and for road construction. These operations yielded clear sections to investigate the stratigraphical formation, especially at the Southeastern part of the mound. During the 1998 survey, traces of a single large mud brick building were noted.⁶ A section of this building was observed to lie directly on top of a natural clay bed. This clay bed diminishes towards the North and is replaced by strata that we believe to be formed from Early Bronze Age and Late Uruk layers. The early settlement of the site must either have been on the slopes of this clay stratum, or

3. Algaze et al. 1994: 6–7.

4. Tipping, 1996: 22–23.

5. Sertok and Ergeç 1999b: 161.

6. Sertok and Ergeç 1999b: 160.

it was on the clay bed itself and was totally demolished during the construction of the large Middle Bronze Age building.

Excavations

Since the construction of the dam was almost over at the beginning of the excavation, the 1999 excavations were carried out only in two sectors: South Sector and North Sector. At the end of the excavation the dam reservoir had risen 5 m and had reached the level of the Middle Bronze Age buildings. Due to the limited time, work especially emphasised on the 2nd Millennium B.C. levels. The highest parts of the mound were left until the later years for investigation. Consequently the highest part of the mound being at an elevation altitude of 354.68 m, the excavations were carried out at 345 m and below.

Trenches were opened in the large section at the Southeast side of the mound and in the sections at a lower altitude along the Northwest side. The trenches were of 5x5 m dimensions and named by upper case letters. The excavation area comprised trenches A–F in the South Sector, and G–O in the North Sector. The excavated area covers an area of 350 m² which is almost one-fiftieth of the whole mound.

The aim of the operation in the South Sector was to remove the upper levels systematically to reach the monumental mudbrick building observed in the section. The work carried out at the North Sector with the aim of both tracing the northern extension of this monumental building and uncovering the earlier levels.

At the end of the season, we had unveiled a cultural sequence from the Late Uruk to the Medieval Ages.

Late Uruk Period

During the surface survey that was conducted by G. Algaze in the beginning of the 90s, a limited amount of Late Uruk period pottery sherds were collected. On the other hand, during the survey conducted by our team in 1998, we found many bevelled rim bowl sherds on the eastern slope of the mound, which is the very characteristic pottery of the Late Uruk Period.⁷ Towards the end of the excavation season in 1999, in a 2x4 m sondage in trench K, The Early Bronze Age pottery was replaced by the examples of above mentioned sherds (Fig. 2A–E). Although no structural remains were encountered other than a plastered conical hollow, these sherds proved the evidence of Late Uruk period settlement under the Early Bronze Age levels in the mound. This level lies almost under the present Euphrates water level. The increase of the water level prevented working in this trench.

Early Bronze Age

The Early Bronze Age building levels were also attested only in trench “K”. Under the monumental Middle Bronze Age building level, with the change of ceramic sequence, we have reached the Early Bronze Age building levels. Three architectural phases were traced within a 150 cm-thick layer.

The earliest level of the Early Bronze Age is the level of a layer of a stamped floor that covers the whole trench, and a structure which was formed with two parallel walls oriented north-south. Stones of various sizes, were set in hard compacted earth of a very mixed com-

7. Sertok and Ergeç 1999b: 161, Fig. 4.



FIGURE 1.

position, consisting of clay, mudbrick, sand and ash. A pot-grave of an infant was excavated in the northern part of the trench. The fine-textured and evenly fired jar had very thin walls, a short narrow neck, an beaded rim and a spherical body and was made from well-fired good quality paste (Fig. 2, 3)

The second building level of Early Bronze Age is resembled with a building of which enclosing south and east walls partly survived on the North that consists of a room with a hearth of circular shape in it. A kitchen pot of coarse ware and a storage vessel of fine paste with flat base were found *in situ*.

The uppermost building level of Early Bronze Age was identified with a two rooms-structure that was formed by a wall which was oriented East-West and another crossing wall in North-South direction. A floor in the west corner was laid, in places, with large pebbles and had been renewed several times. Erosion had destroyed the large part of the hearth with a plastered floor found at the North.

Compared to the monumental Middle Bronze Age building the Early Bronze Age structures were of course simple, with the characteristics of ordinary dwellings. Among the pottery discovered in these structures, the fine-textured, well fired, and wheel-made *mass production ware* is of special interest (Fig. 3). These vessels appear in the middle of the Early Bronze Age and are known from several sites in North Syria and especially from the Middle Euphrates basin⁸ such as Ebla, Hama, Hadidi, Halawa, Til Barsip, Qara Quzaq, Gerablus Tahtani, Hammam et-Turkman, Tel Chuera etc.⁹ They were made on a fast-turning wheel, fired hard, with thin walls, and of good quality paste with a very fine-grained consistency. Most of the larger vessels with globular body, plain surface, and out-turned thickened rim have ring bases (Figs. 3G–H, J–K, M). Fewer, but typical examples, are the tripod vessels with cylindrical legs (Figs. 3N–O). Sherds of conical cups, *Hama goblets* and *Syrian bottles* are quite common in small sized cups (Figs. 3A–F). The use of the fast-turning wheel has offered the opportunity of enriching their surfaces with horizontal grooved or burnished lines or red painted bands. The cooking pots were made from a buff grey-brown fabric with sizeable inclusions. Among them are distinguished the pots with triangular lugs on the rim and lightly burnished exterior surface.

Very few examples such as two pedestal sherds of fruitstands found in the 1999 season excavation (Figs. 2F–G), are not yet sufficient to claim the existence of early phases of Early Bronze Age in the mound. In contrast to this, the pottery which was found in a cist-grave near the Keleklioğlu village, some eight hundred meters southwest of the mound and brought to us by the villagers, represent the earliest phase of the Early Bronze Age. Among them two fruitstands (Figs. 4B) and a bowl with double perforated handles are of the types well known from Carchemish¹⁰ and Birecik Dam Early Bronze Age Cemetery.¹¹

Terra-cotta bull figurines, flint knives so called Cananian *blades*, and the other small finds are typical to this age.

Middle Bronze Age

This age is represented with a monumental building complex that lies in both south and north trenches. Only a part of this building was excavated which measures 45 meters from

8. Jamieson 1993; Thissen 1989; Mazzoni 1985; Dornemann 1979; Kühne 1976; Algaze 1990.

9. Orthmann 1981; Fugmann 1958; Olavari-Oviedo 1992; Peltenburg 1997.

10. Woolley 1952.

11. Sertok and Ergeç 1999a.

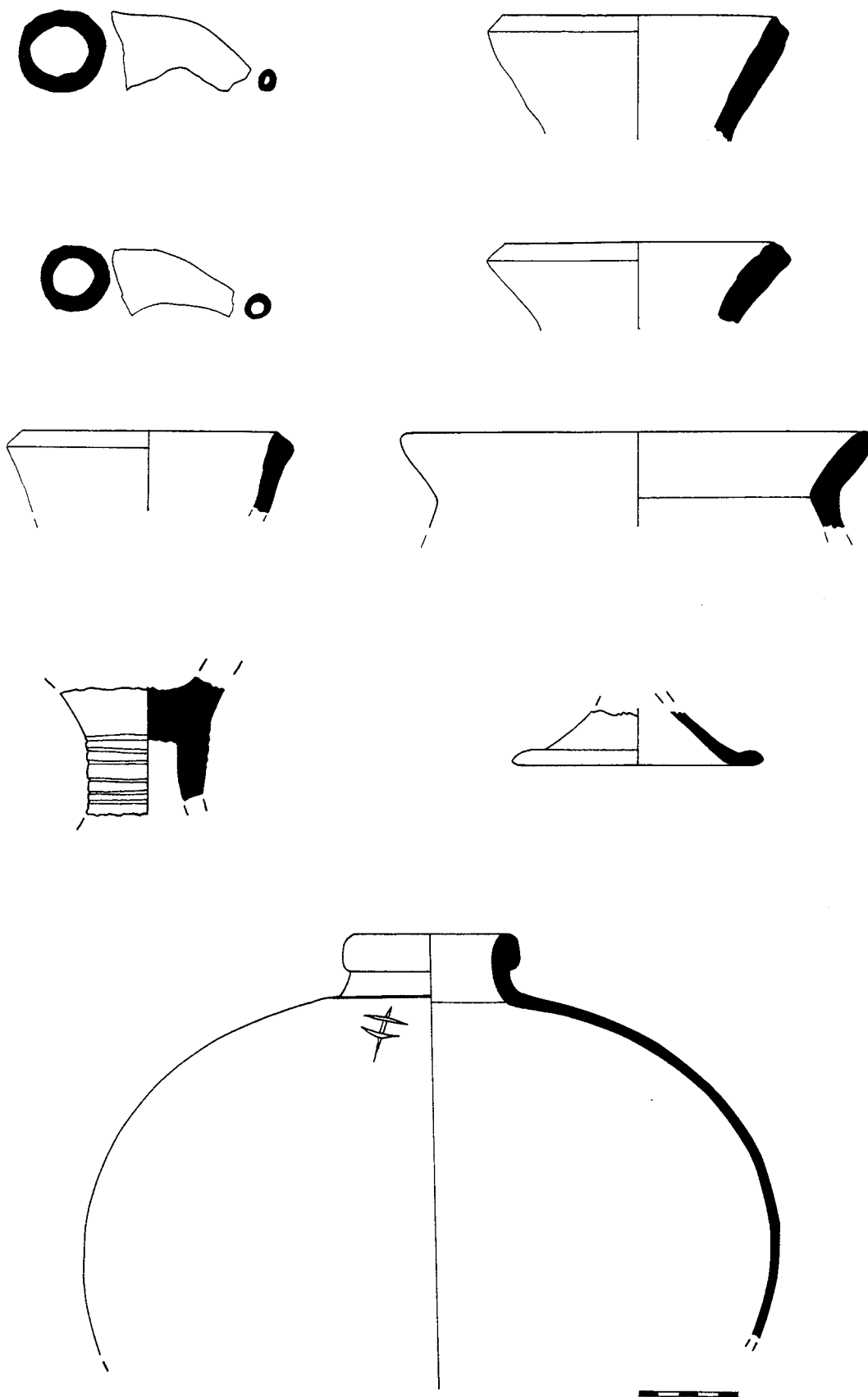


FIGURE 2.

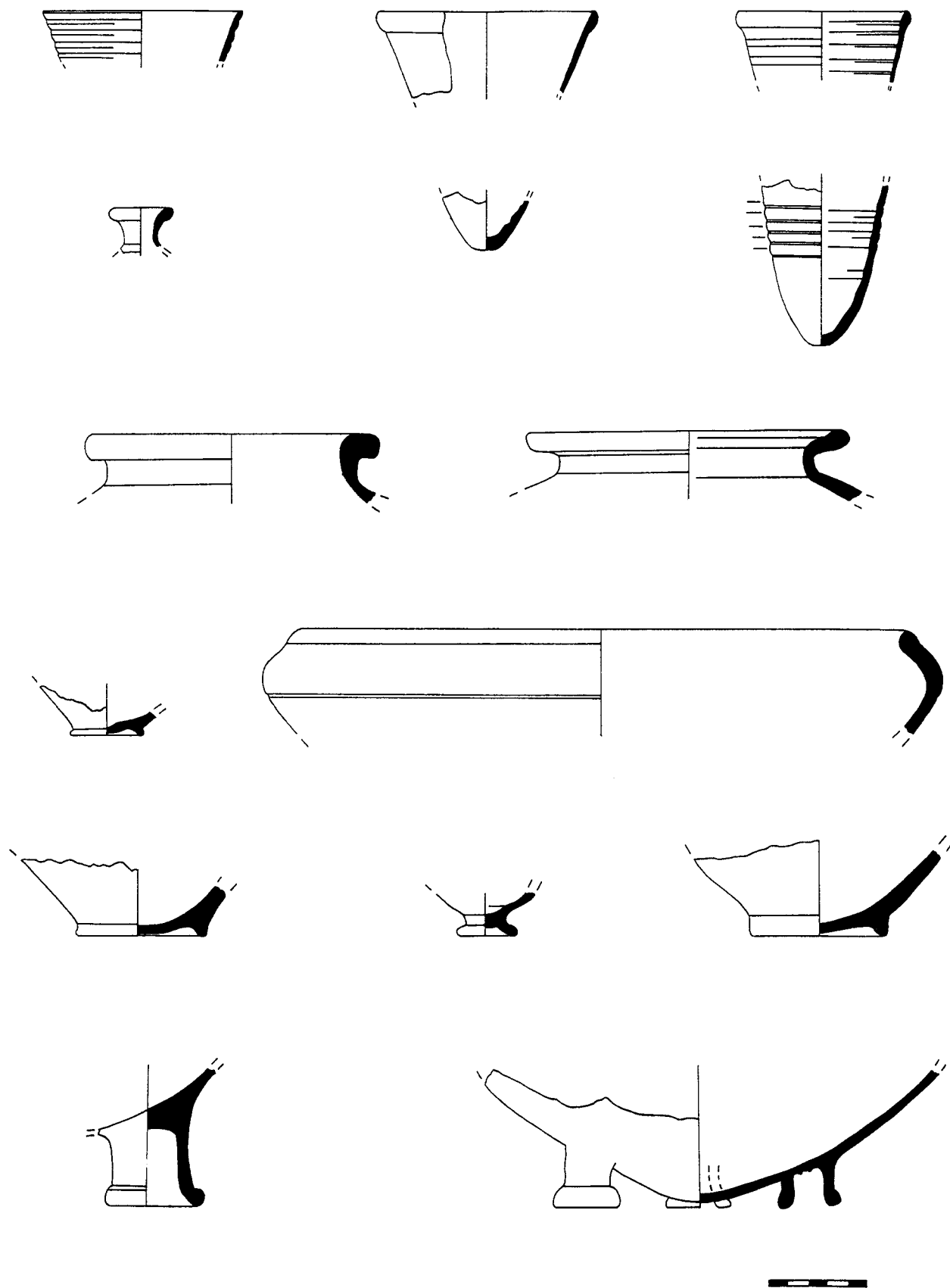


FIGURE 3.



A



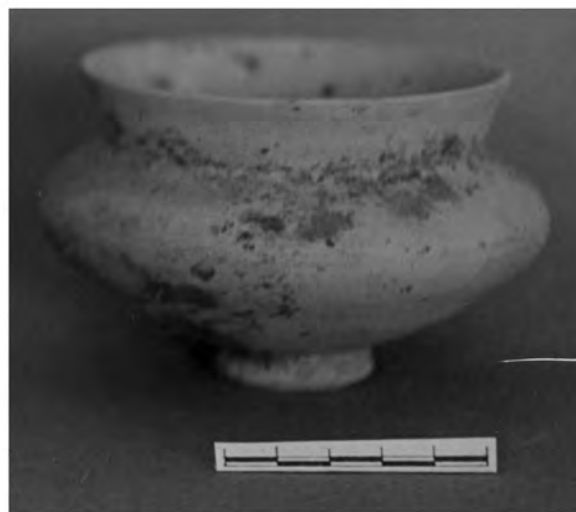
B



C



D



E



F



G

FIGURE 4.

south to the North (Fig. 1). The many storage jars, that we have excavated, give the impression that we have unearthed only the storerooms of the building. The architectural features and evidences, that we were able to trace, show that this building was renovated at least for a few times, and without going to any change in outlay, old walls were thickened with new support walls. The same is also observed for the defence wall, part of which was excavated in trenches E and F, and which in some places measures 120 cm in height. The thickness of the internal walls of the building is 60–70 cm and that of the surrounding wall is 120 cm.

The wall was constructed from mudbrick on a single foundation course of medium-sized stones. The dimensions of the mudbricks are around 35x35x8 cm. It is noteworthy that, contrary to general practices the bricks contain no chaff or other organic inclusions.

A stone cist-grave (B62) oriented Southeast-Northwest, was placed under the floor of the rectangular room (B52) in the South Sector A (Fig. 1). The tomb must have been robbed in ancient times. The covering stones had been removed, and almost half of the grave had been filled with the debris. The archaeological and anthropological finds show that the grave had been used for multiple burials. The skull of the later burial was to the South with its body facing East, and its legs drawn up towards its abdomen. The bones of the two earliest individuals belonging to the earlier burials had been dispersed in the east corner of the tomb.

The Middle Bronze Age on the mound continued for some time after the destruction of the monumental building. The latter phase is represented by a large number of simple graves observed on top of the ruins of that monumental building excavated both in the North and South Sectors. Although very few traces survive, at least two phases were observed in the structures within which these burials were dug.

The typical pottery of the Middle Bronze Age is the large provision jars with grooved and out-flaring rim (Fig. 4D). These jars also have combed decoration forming broad wavy lines, between two parallel bands on the shoulder. Another decorative pattern consists of narrow bands of motifs such as wavy lines, guilloche, etc., bordered by two parallel grooved lines on the shoulder. The pottery with this type of decoration is of various shapes; with short narrow neck, broad body on a plain conical foot, or with a wide mouth, short neck and short low handles on the broad body, or large deep neckless pots with a wide mouth. Similar vessels of this type are traced in the Middle Euphrates and Balikh Valley, such as Haradum,¹² Hadidi,¹³ Kara Kuzak,¹⁴ Hamman et-Turkman¹⁵ and other Middle Euphrates sites.

The closest parallels of the pilgrim flask which was found in the cist grave (Fig. 4C), were seen in the Kargamı,¹⁶ Mari,¹⁷ Haradum,¹⁸ Kurban Höyük,¹⁹ and Kültepe.²⁰ The Syrian bottles also show close connections with the North Syrian sites and neighbouring settlements.

Another group of pottery characterising the Middle Bronze Age at Şaraga Höyük comprises the vases with ring base, low body with carinated belly, wide cylindrical neck and flat rim (Fig. 4E, 4G). These wheel-made, hard-fired vessels vary in their fabric colour and qual-

12. Kepinski-Lecomte 1992: 202, Fig. 68: 4–9.

13. Dornemann 1992: Fig. 5: 10–11, 6: 1–5.

14. Olavarri-Oviedo 1992: 39, Fig. 10: 12–16.

15. Curvers 1988: Pl. 136: 138, 139, 142–143.

16. Woolley 1921: Pl. 27: d3.

17. Parrot 1959: 117, Fig. 84: 856.

18. Kepinski-Lecomte 1992: 218, Fig. 76: 1–2.

19. Algaze 1990: Pl. 116

20. Emre 1995: 178–179, Pl. VI: Ia.

ity. They can be divided into secondary groups according to their neck and body profiles. A great number of these vases were found on the mound, mostly used as grave goods. Similar vases were known from Carchemish,²¹ Hammam et-Turkman²² and Haradum.²³ There is also another group that shares the same shape as painted Habur ware.²⁴ Two bottles, one found in the stone cist-grave (B62), the other in a simple grave of the late phase in trench A (B48), are related to the Syrian bottle type bottles; they have a spherical body with horizontal grooves and burnished surface, short and narrow neck and everted rim, and are made of grey-black fabric.

In trench H was found a baked clay plaque, roughly rectangular in shape, with a seal impression on which five figures can be made out (Fig. 4B), representing an adoration scene popular in Old Babylonian style. The use of drill makes one to date this impression to the latest phase of the questioned style.

Late Bronze Age

A series of modest architectural layers containing features related to everyday life such as ovens and hearths succeed the Middle Bronze Age.

A level of simple planned houses represents this age. No significant change between the Middle Bronze Age and Late Bronze Age levels was identified. This period is best observed in the trenches of G, H, J, M, and N. Of the structures exposed, the mudbrick walls on a single layer stone foundation survived to a height of 40–50 cm in some places. One of the rooms was paved with a floor of flat slabs (B6).

A Mitannian seal bearing the distinctive characteristics of the Mitanni art was found in one of the upper phases in trench H (B17). Two figures in an attitude of pray, flanking a tree of life and two crossed bulls with the horns pointed backwards and a third animal above them were depicted on this limestone seal. Late Habur ware contemporary with Nuzi pottery found in the succeeding levels help to date these layers, as well as providing confirmation of the presence of Mitanni culture in the region. A sherd of a low-bellied vessel with a cylindrical body, decorated with geometric hatchings and bands of water fowl between dark brown lines on a beige slipped ground (Fig. 4F), was found in Trench G, in a room bounded by two walls oriented in North-South and East-West directions. These vessels have the same motifs as the Nuzi ware known from similar contexts at Mitanni sites of Habur, the Diyala Valley and the Amuk Plain,²⁵ but differ from them with the white paint on a black ground.

Iron Age

Under the surface soil in the H, I, O, P trenches of the North Sector we have unveiled the two building levels of the Iron Age. Only at the trench “I” we could be able to trace the levels of Early Iron Age. Unfortunately no structural remain which could give an idea about the architectural features of the Early Iron Age was attested.

21. Woolley 1921: Pl. 27: b-d.

22. Curvers 1988: 424–426, Pl. 127: 58–59, 128: 60, 62, 64–65.

23. Lepinski-Lecompte 1992: 270, Fig. 102: 5–6, 8–11

24. Speiser 1933: Pl. CXX Type 125; Matthews 1995: Fig. 21: 6–9.

25. Speiser 1933: Pl. LX: 3; Mallowan 1946: Fig. 11: 6, 10; Mallowan 1947: Pl. LXXVIII: 5–6, 8–9, LXXVII: 1; Woolley 1955: Pl. XCV: AT: 46: 336.

One of the important finds of the later phase of this period was a pottery kiln unearthed in Trenches H and I composed of three deep evenly arranged horseshoe-shaped recesses that opened into a wide and deep central depression. The kiln was preserved to a height of one metre in places, and its construction partly cut into earlier level of this period. Very little evidence survives to indicate the shape of the upper part of the kiln. Similar kilns are known from the Late Bronze Age levels of Nuzi and Tel Jigan.²⁶

In trench I, beneath the pebble paved floor, to the West of the kiln, an inhumation burial was discovered. Despite the simplicity of the burial type, it consists of rich gifts. A bronze *kohl* tube which was formed from two joined cylindrical tubes, a bronze mirror, silver and agate beads of a necklace, copper ring and earrings are the examples of the burial gifts. These gifts resemble the Deve Höyük Achaemenid Cemetery findings near Carchemish.²⁷ A row of seven upturned amphorae were lined vertically at the west side of the deceased. In the Southwest part of trench O, covering more than one m² area, a section of floor paved with square tiles survived. The rest have been destroyed. No other architectural structure associated with this floor was found. Several horse figurines, and a female figurine were scattered over the northern half of the same trench. The mould-cast female figurine, shows a woman dressed in a pleated long-skirted garment, with one hand holding her breast. In the level of the same period were found several sherds of amphorae of the same form as the seven complete amphorae discovered in the grave. Examples of this type of amphorae with conical base, narrow cylindrical body and narrow neck, flaring rim and small handles on the shoulder are known from the Eastern Mediterranean,²⁸ and in contemporary levels at Hacı Nebi²⁹ and Mezraa-Teleilat Höyük.³⁰ These levels characterised by the small finds mentioned above can be dated to the 7th–4th centuries B.C. The Iron Age strata may be evaluated together with the corresponding levels from sites such as Carchemish, Yunuslar,³¹ Deve Höyük³² Hacı Nebi³³ and Mezraa-Teleilat.

Medieval Ages

In the South Sector we revealed the building levels of this age. Medieval pottery found on the surface in the North Sector consisted only of material washed down from higher parts of the mound. The settlement of this period, with a great possibility, retracted to the nucleus of the mound, extended over the flat terrace at the South and towards the West, rather than on the North and West slopes that had been eroded by the Euphrates and the villagers. Underneath the surface soil in trench A, a 120 cm thick-wall built of large stones, oriented in East-West were unearthed. This wall crosses with a North-South oriented wall of a similar character in the west part of the trench. Its dimensions and location show that it could be a part of a buttress or a fortification wall. Tumbled wall remains were uncovered in trench D, and a room whose north, south and west walls were preserved was uncovered in trenches B and C. Abutting in right angles against the west wall of this room was a further wall, adjoin-

26. Fujii 1987: 66, Fig. 6; Starr 1939: 55, Plan 25.

27. Moorey 1980: Fig. 15.

28. Amiran 1970: Pl. 81: 4, 6; Grace 1956: Fig. 7: 2.

29. Stein et al. 1996: 91.

30. We would like to thank M. Özdoğan for this information and for allowing us to see the amphorae from Mezraa-Teleilat.

31. Woolley 1939.

32. Moorey 1980.

33. Stein et al. 1996.

ing which was a two-phased oven structure, the only complete architectural feature discovered at this period. Within a garbage pit beneath the stone paved floor of this structure was found a human skeleton. A large number of pits in this area had been dug down as far as the monumental Middle Bronze Age structure, causing considerable damage to the Iron Age and the Late Bronze Age layers. In addition to the glass, blue and brown glazed sherds from the layers belonging to this period, typical examples were single-handled pots made of black-dark red mottled fabric with sand and mica inclusions, embellished by the use of various techniques such as relief, stamped, painted and incised decoration.

Results of the first season

Unfortunately the waters of the dam reservoir, that had already begun to rise at the end of the excavation season, will restrict the works in the prehistoric levels in the future. The water of the Dam almost covered the remarkable part of the mound; especially the Late Uruk and the Early Bronze Age levels. Although the excavations lasted for only three months, the information that we have collected from the excavations is sufficient to fill the gap in our knowledge of the ancient Carchemish area. Şaraga Höyük seems to be the only site of the salvage project which could reveal the whole sequence of cultures from the Late Uruk period to the end of the Medieval Age in the region.

Algaze compared the neighbouring Late Uruk sites of Tiladir, Padi Tepe, Kumtepe and Komeçli with the sites of Habuba Kabira, Cebel Aruda and Tel Kannas in the Tabqa Dam basin, and saw them as the centers of a colony system settled by Uruk groups engaged in business dealing with this part of the Euphrate region.³⁴ The Late Uruk settlements are not limited to the sites mentioned above, but show a denser distribution.³⁵ The excavation finds are not yet adequate to explain, where within the Uruk System, Şaraga lies. However, in contrast to the sites mentioned above where the occupation ended, the settlement at Şaraga Höyük continued its existence after the Late Uruk period.

Within this sequence, of special importance is the monumental Middle Bronze Age building and the small finds associated with it. The close political and economic relations between the Old Assyrian, Babylonian and Yamhad gave rise to important events that shaped the historical geography of the Near East. These events can be summarised briefly as such occurrences as Shamshi Adad's expansion into Syria, the curtailing of this expansion by the Yamhad king Iarimlim, the short supremacy of Zimrilim at Mari, and the Babylonian king Hammurabi taking over Mari and putting an end to Zimrilim's authority.³⁶ In this milieu, there was a rather long step forward in the shift from a city-state to a centralised city state system, and the Kingdom of Carchemish held a unique place in relation to these sites whose development were based on an organised large-scale agricultural economy, since it controlled the important routes between the Anatolian sites possessing the natural resources that formed another vital requisite of these developments.³⁷ Carchemish once again appeared on the historical stage in the 18th century B.C., about a century after these developments occurred during the campaigns in Syria of the Old Hittite kings Hattusili I and Mursili I.³⁸ Carchemish continued its being as an important site during the 15th–14th centuries, when

34. Algaze 1993: 110.

35. Algaze 1994: 11–12, Fig. 15B.

36. Kupper 1966.

37. Güterbock 1954: 110; Veenhof 1993: 645.

38. Hawkins 1997: 424.

Mitanni control extended to the Mediterranean shores. Contrary to this information, which relies very much on written sources, excavations at Carchemish at the beginning of the 20th century yielded relatively limited remains of this period, since the excavations were emphasised on the later periods. The present situation of Carchemish will prevent the possibility of scientific excavations at the site in the near future. It is then fortunate that Şaraga Höyük, only 10 km north of Carchemish, was chosen as the site of an excavation and that it has produced significant results. Although the importance of Şaraga Höyük in this period is not of the first degree because of the neighbouring Carchemish, the existence of this administrative building shows that Şaraga Höyük was another important settlement in this period. Consequently, the Middle and the Late Bronze Age finds from Şaraga Höyük will illuminate those periods that are not possible to investigate at Carchemish.

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From Tell Khoshi (Iraq, Sinjar) to Tilbeshar (South-East Turkey), 3rd Millennium Urbanism of the Jezireh

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Abstract

Tell Khoshi and Tilbeshar illustrate two of the great cities that developed all over the Jezireh, from Upper Mesopotamia to Southeast Anatolia, during the Early Bronze. The author analyses the different developmental stages of these cities and deliver an appreciation of their potentials both strategic and in raw materials. Urbanism in Upper Mesopotamia can't be reduced to a single an unique model of a city.

Tell Khoshi and Tilbeshar illustrate two of the great cities that developed all over the Jezireh, from Upper Mesopotamia to Southeast Anatolia, during the Early Bronze (Fig. 1).

Tell Khoshi is located to the south of the Jebel Sinjar in Iraq. We made a topographical plan of it in 1989, as well as a rapid surface collection. For well-known reasons, the campaign that was to take place in 1990 was cancelled and we have never gone back (Kepinski-Lecomte 1990). It is an oval fortified site, 1150 meters long and 800 meters wide. To the northwest, a citadel is composed of two small tells, rising to a height of about twenty meters. The lower city has levels preserved from six to twelve meters. The enclosure wall is preserved from eight to ten meters. The oldest settlement of the two northwest tells covers no more than one and a half hectares, and the expansion of the city probably dates from the second half of the third millennium. The surface collections furnished homogeneous artefacts: essentially Akkadian ceramics, Ur III, Habur ware, mitannian and medio-assyrian wares. No sherd is more recent than 1200 B.C., and the city does not seem to predate the middle of the third millennium.

Situated on a tributary of the Euphrates, the Sajour, Tilbeshar is a more or less circular site covering about sixty hectares, with a citadel forty meters high, surrounded by a lower city preserved between two and six meters above the virgin soil. Occupied since the Neolithic, the site developed during the Early Bronze and was abandoned at the end of the Middle Bronze. A medieval settlement, mostly from the twelfth and the thirteenth centuries, occupies a large part of the oldest site. Since 1998, after having spent several years studying the history of the site, we have been concentrating our efforts on extending the excavations of the Early and Middle Bronze levels, all the while continuing a stratigraphic trench opened in 1996.

In undertaking the excavations in Tilbeshar, as in Tell Khoshi, we aimed to document in southeast Turkey, as in northern Iraq, a large city of the third millennium which had also been settled at the beginning of the second millennium, in order to study the transition be-

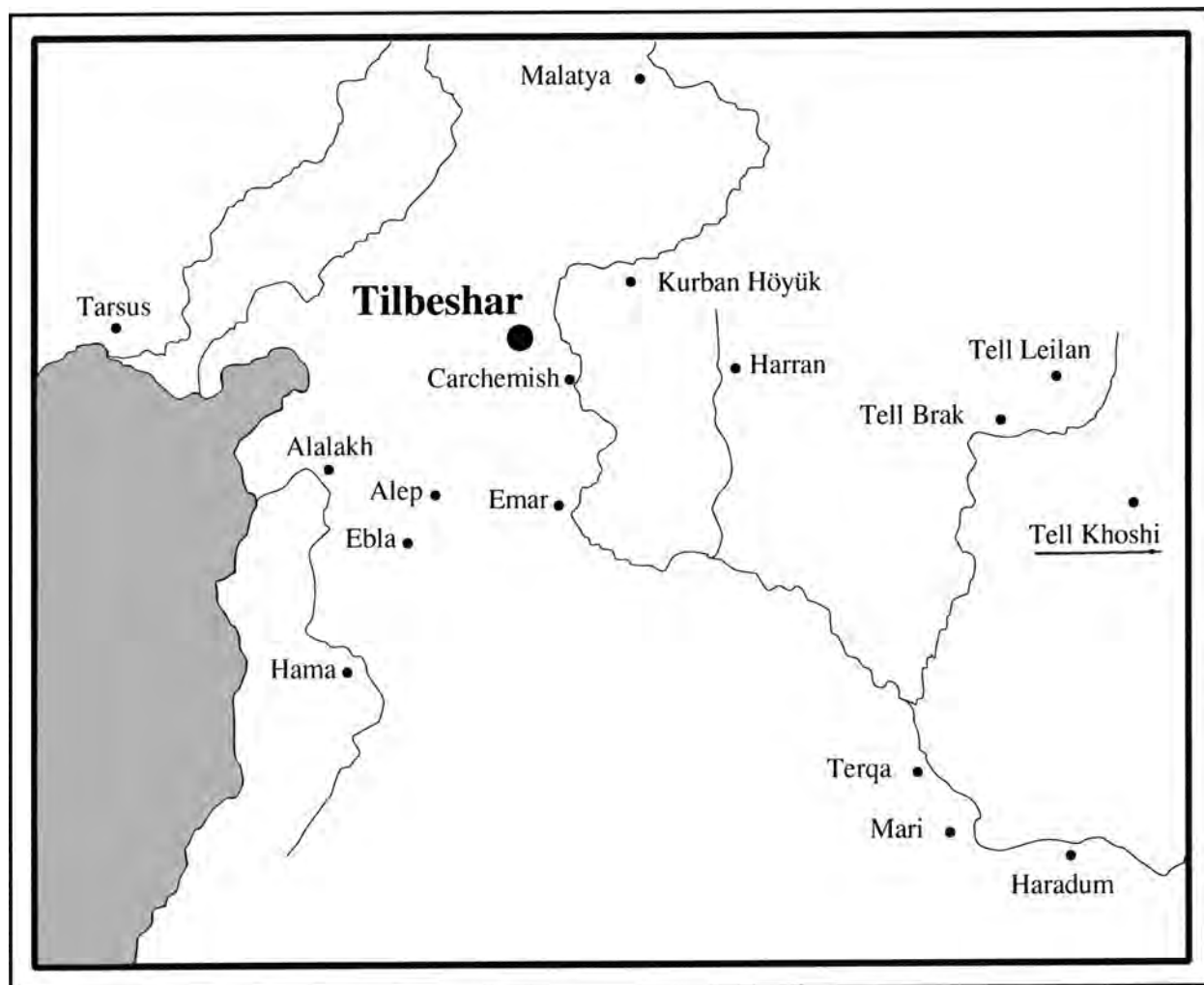


FIGURE 1. Map showing location of 3rd Millennium Sites.

tween the two periods. We were looking for additional information on the rapid urbanization of the northern plains and the fall or restriction of the urban phenomenon.

This file is seen regularly in northern Syria, but also in southeast Anatolia, with sites located near Euphrates, such as Kurban or Titris Höyük, and especially near the current city of Urfa and, not far from Harran, Tell Khazane, the hundred hectar site excavated by Patricia Wattenmaker. For ten years now, Iraq has supplied no information.

For fifteen, or even twenty years, several sites have regularly documented the development, in the middle of the third millennium, of large cities covering a hundred hectares. We have often spoken of them in terms of a second urban revolution, the first being contemporaneous with the Urukian period and the large cities of southern Mesopotamia. In both cases there is an implicit postulate, that of a powerful dominating influence on this process by the southern Mesopotamian cities of Uruk and Akkad. For a long time, as we all know, the history of the ancient Syrian or Anatolian societies and even the Gulf countries has been seen as peripheral, Mesopotamia being better-known and more spectacular.

For ten years, this “Center” has communicated no new information on its past. Consequently the peripheral “provinces” have gained the specificity they lacked, and their history is no longer interpreted exclusively in terms of that of the “Country of Two Rivers”. Archae-

ologists of the Upper Anatolian Euphrates claim the existence of complex societies before the contacts with Uruk of Lower Mesopotamia, those of the Habur adopted their own chronology (Jezireh I, II, etc.); those of the Gulf recall that the sea separated them from Mesopotamia, and that the proofs of their common past are probably buried beneath the current shores. But, above all, this silence hides entire sections of our documentation.

Currently the existence of large cities in Upper Mesopotamia is clearly attested to in the second half of the third millennium, but that of earlier cities is less well-known, subject to the collection of data, and due also to a possible problem of definition. Between the cities known as Urukian colonies of the Middle Euphrates and the cities now known in the Jezireh, most of which do not date earlier than the second quarter of the third millennium, there is often a missing link. Levels from this period, in fact, have not yet been reached at a great number of the sites of the Habur. Simultaneously Jean-Claude Margueron, in Mari, and Israël Finkelstein, in Megiddo, are excavating cities from Early Bronze I.¹ In Tell el-Hawa, in northern Iraq, Warwick Ball thought he recognized a city from the beginning of the fourth millennium (Ball 1990).

The rarity of Early Bronze I cities might be explained in several ways: (1) either a large part of the important settlements of the fourth millennium disappeared or experienced restriction, like Arslan Tepe for example or (2) there is a lack in our documentation or (3) there is a problem of definition with the criteria for recognizing a city.

As for the criterion of size, a city can be miniscule. Haradum, for example, is a city of the Middle Bronze (Kepinski-Lecomte 1992). At once a new city and a colony of the Babylonian kingdom, its surface did not exceed one hectare. Also, although a fortification wall can surround a village, many cities of the third millennium are without them, such as Tell Taya and Tell el-Hawa in the Sinjar in Iraq, or Tell Brak.

We will go no further before examination of these data, but it is evident that there exist different types of cities with various functions. They were obviously settled by different groups. To look for a single model city with respect to the Mesopotamian centers is thus completely utopian.

Nevertheless, there exist some common points among these different cities. For example, metallic ware that characterize the *Kranzhügel* also characterize the period during which a high terrace was constructed in Tilbeshar, around 2700 B.C. Moreover, it seems to appear in the Euphrates before being known further east.

On another subject, contacts between the Jezireh and Mesopotamia, whether commercial, ethnic, military or political, were established early. Well before the Urukian expansion, we find Ubaid ceramics as far as the Upper Euphrates and beyond.

But in Anatolia, in the third millennium, and doubtless well before, Mesopotamia is not the only source of trade. Recent excavations by Marcella Frangipane in Arslan tepe, or those of our Turkish colleague Kemal Sertok in the cemetery of Birecik (Sertok 1999), near the Euphrates, have shown the recurrent presence of Caucasian objects and ceramics, mingled in graves, for example, with ceramics of southern Mesopotamian origin.

A better understanding of the process of urbanization in the Jezireh, from southeastern Turkey to northern Iraq, requires, of course, a careful examination of the interactions between the different cultural foyers concerned, but also of the different developmental stages of the cities. From this viewpoint, it could be interesting to evoke briefly the main results obtained in Tell Khoshi, and especially in Tilbeshar.

1. Various communications in Paris.

From two modest settlements no larger than one hectar, Tell Khoshi experienced an important expansion (100 hectares), most likely at the beginning of the second half of the third millennium. It probably illustrates the rapid passage from village to city. It is still occupied at the end of the third millennium, at a time when other sites are abandoned. This level is followed by a more limited Middle Bronze settlement.

Tilbeshar is perhaps already a city as early as the end of the fourth millennium, or else it shows proto-urban characteristics: in any case, settlement is surrounded by an enclosure wall, but it is limited to the six hectares of the upper city (Kepinski-Lecomte 2000, 2001).

In the course of the Early Bronze I, there was apparently an impoverishment, and the construction techniques are radically different. We pass from buttressed walls of rectangular mud brick, arranged in heads and stretchers to square mud bricks, and there is no more an enclosure wall. However, the ceramic assemblages of the two levels present many common traits.

In the EB, around 2700, Tilbeshar experienced the construction of a monumental high terrace, with three degrees preserved to a height of seven meters (Kepinski-Lecomte 1998). It seems comparable and in any case, contemporary with that of Tell Mozan. In Tilbeshar, unfortunately, we will probably never know its function, since it is covered over by imposing ruins from the Middle Ages. It would have involved a large amount of workers, a distribution of tasks, a complex administration, and a form of centralized power.

Shortly thereafter, but these are currently the most poorly dated levels, between 2650 and 2350 B.C., the settlement extended from the foot of the citadel, to the south, then to the north. Our evidence for this level is still scanty. To the north, however, at the bottom of a sounding, we uncovered elements of a large building; and to the south, a settlement that is clearly domestic. The two lower cities were abandoned abruptly and the ceramics remained in place on the floors.

The next city is a very prosperous one, constructed on terraces. In the street, gutters of upright flat stones permit the drainage of rain water. In this city the orientation of the buildings is the same as that of the older level, but the streets are traced differently. C14 analyses of charcoal clearly put this city at the end of the third millennium, 2200–2000 B.C., at the time when Ebla, nearby, seems to have experienced a certain limitation. It was also abandoned abruptly, and we uncover here well intact floors. Traces of floods and important disturbances discovered in the northeast corner could date from the end of the third millennium, and these floods could perhaps be linked with those of the Euphrates, which affected Jerablus Tahtani, for example (Peltenburg 1996).

In the Middle Bronze, Tilbeshar was to experience a resettlement that seems to involve the entire lower cities. Here again, the orientation of the walls is essentially the same but the network of streets, at least in part, is different. Also the function of the districts does not seem to be the same, but the architectural principles are of comparable quality. In the two levels we can note, particularly, the use of almost Herculean blocks, then of small pebbles layers of adjustment and superstructures in mud brick. The ceramics include some common characteristics, but we can clearly distinguish between the two periods. The concept of a transition period Early Bronze/Middle Bronze corresponding to Kurban Höyük's period III, can no longer be considered valid. Moreover, with this Middle Bronze city, we can not speak of a restriction of the urban phenomenon, either in size or in quality. This city, too, was abandoned suddenly and never resettled.

Throughout the third millennium, and in certain cases, as early as the fourth millennium, all the cities of the Jezireh are involved in trading networks, both regional and long-

distance, according to both their strategic potential and their potential in raw materials. The unequal distribution of the various elements of this potential created a need for trade. Obviously, these networks are not all contemporaneous, and are determined by the history of each of the groups concerned.

Situated to the south of the Jebel Sinjar, Tell Khoshi is at the southern limit of a 10–15 km cultivable strip, fertilized by the run-off water from the *jebel*, bordering on a vast, totally inhospitable desert zone, crossed by simple trails. This plain is gouged out by seasonal streams, some of which feed the Wadi Thartar to the south. However, the majority of the flowing water is subterranean. Thus, the environment is, on the whole, favorable, and the agricultural potential is significant, without irrigation. However, the climatic factors are crucial, and sufficient watering depends entirely on the rains.

Tilbeshar is directly related to the valleys of the Euphrates to the east, the Qoueiq to the south, and the Afrin, and then the Amuq to the west, all of which are potential means of communication. Tilbeshar is located, among others, on the natural route leading from Carchemish to Yamhad and then Ebla. The current, quite fertile, agricultural soil is due in large part to irrigation. Located in the center of an alveolus, Tilbeshar is surrounded by hills, covered here and there by slides of basalt.

On the non-irrigated slopes, arboriculture is currently practiced, with olive trees, pistachio trees and vineyards. Dry cereal cultures also permit the production of barley and vegetables and this agricultural landscape probably reflects that of the past. Otherwise, a study of Tilbeshar's ancient fauna informs us that the presence of stags and roe deer suggests a relatively wooded environment around the site².

In Mari's texts, commerce with the region of Carchemish is well-documented and we learn that one went there to get olive oil, wine and certain species of wood. There is no reason not to speculate that the same was true as early as the third millennium, and even earlier.

Tilbeshar's potential, as well as that of Tell Khoshi or many other sites, is at the same time the reason for these cities' development, but also the cause sometimes of their regular abandonment. The totality of the data suggests societies whose economies probably lacked diversification, and were accordingly extremely fragile. A slight imbalance, constraints linked to the environment might cause mutations, or the abandonment of one city.

Whatever the case, the constitution of a significant corpus allows us to better evaluate each stage. Actually, the very end of the third millennium is abundantly illustrated both in northern Iraq and in southeast Turkey. Nevertheless, the beginnings of urbanization in the Jezireh remain to be clarified, along with the determination of the specificities of each of the cities in question.

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Canals and Drains. Sewers in the Early Jezireh Palatial Complex of Tell Beydar^{*}

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Abstract

Eight seasons of field work at Tell Beydar in the Habur region (Northeast Syria) have revealed the remains of a palatial complex of the Early Jezireh IIIb phase on the acropolis. Remarkable are the amount of drainage installations inside this building. Canalisation systems are a necessity in mudbrick architecture but are unfortunately underground features and therefore often neglected in archaeological research. Ancient drainage systems have basically two main functions: supply of water and evacuation of water/sewage. This paper will deal only with the latter.

At Tell Beydar the palatial complex is well provided with canals and vertical drains. An overview is given of every excavated installation connected with a vertical drain. Furthermore a study is conducted towards the canalisation that evacuated rainwater outside the building complex. Besides the expensive material applied to build these canals at Tell Beydar, good knowledge and experience in hydrodynamics were required in order to build them in the way they did.

This paper hopes to contribute to the rather scant knowledge of the assemblage and development of sewage systems during the third millennium B.C. in northern Mesopotamia.

First of all we would like to mention that what is presented here is the work of several scholars who excavated on the acropolis during eight seasons, under the auspices of the Directory-General of Antiquities and Museums, Syria and the European Centre for Upper Mesopotamian Studies, an association coordinating at Tell Beydar the activities of representatives and scholars from various European universities including the Katholieke Universiteit Leuven, the Westfälische Wilhelms Universität Münster, the Université Libre de Bruxelles, the Università Ca' Foscari di Venezia and Ecums-Spain, represented by the Universidad de Murcia and the Universidad Autónoma de Madrid. The Syro-European Excavations at Tell Beydar are placed under the joint direction of Dr. Antoine Suleiman (DGAM, Syria) and Dr. Marc Lebeau (ECUMS).

Eight seasons of field work at Tell Beydar in the Habur region (Northeast Syria) have revealed the remains of a Early Jezireh IIIb palatial complex in the centre of the upper

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town.¹ The amount of drainage installations inside this building is remarkable. In order to fully comprehend the functionality of this administrative building we have to consider every aspect of its features, including the less visible and obvious ones, like the canalisation systems. They are a necessity in mudbrick architecture. Furthermore, these canalisation systems, within the process of urbanisation, are one of the major developments. They are, unfortunately, underground features and therefore often neglected in archaeological research (Hemker 1993: 173). These ancient drainage systems have basically two main functions within a mudbrick building: supply of water and evacuation of water/sewage. This paper will deal only with the latter.

At Tell Beydar the palatial complex is well provided with canals and vertical drains. They serve to evacuate water from inside the building towards the outside or into waste pits/drains inside the building itself (Debruyne 2000). In the first part we will investigate the horizontal drains built inside the administrative complex (Debruyne in press). In a second part the vertical drains will be analysed and some correlated material will be presented (Van der Stede in press). The main focus here is to show, in a general overview, the different kinds of sewers and their archaeological context. With this paper we hope to receive some feedback on this difficult topic. A recent study by Christiane Hemker (Hemker 1993) on drains and sewers led to the conclusion that not much information is to be found in archaeological publications and especially for the region of North Syria. Therefore, we would like to bring up this topic because a great deal of information is available from Tell Beydar and we can thus contribute to a better understanding of ancient drainage systems.

Canals

Two main lines of sewage systems have been recovered in the southwest part of the complex and are most likely linked with each other, see Fig. 1. They gather the rain and waste water from different courtyards and installations and it seems that they head out to the south via the one line running north-south. This needs to be investigated next season. The west-east line is built with basalt stones and looks fairly regular. It is not possible yet to give a full description of the structure because it is not extensively excavated. Large cover stones were laid on top lengthwise to close the sewer. Its links with other features and structures is not known since it only came to light last season. Another difficulty here is that the remains are scanty because the Akkadian occupation levels in this part were very destructive. On the acropolis the Akkadian occupation layers were directly built on and into the Early Jezireh IIIB layers, which often results in quite complex stratigraphic situations. In this area Akkadian and Early Jezireh layers are often intricate. This canal was reused in the Akkadian period. An intake coming from the south was led into the main line which belonged to overlying Akkadian installations. The canal from the north belongs to the Early

1. The material presented here is derived from various areas of the acropolis excavated by several teams of the joint project, i.e., F1 under the responsibility of Michel Debruyne (KUL), F2 under the responsibility of Joachim Bretschneider (WWUM), F3 under the responsibility of Antoine Suleiman (DGAM, Syria) and F4 under the responsibility of Paul-Louis Van Berg (ULB). The information was given to us by courtesy of the above mentioned colleagues and by the co-directors Dr. Marc Lebeau and Antoine Suleiman whom we thank for their cooperation. For general information of the excavation results at Tell Beydar see Bretschneider Joachim et al. 1997: 117–134; Bretschneider Joachim and Greta Jans 1997; Lebeau Marc and Joachim Bretschneider 1997: 151–160; Talon Philippe et al. 1999: 193–197; Talon Philippe et al. in press; Debruyne Michel 2000.

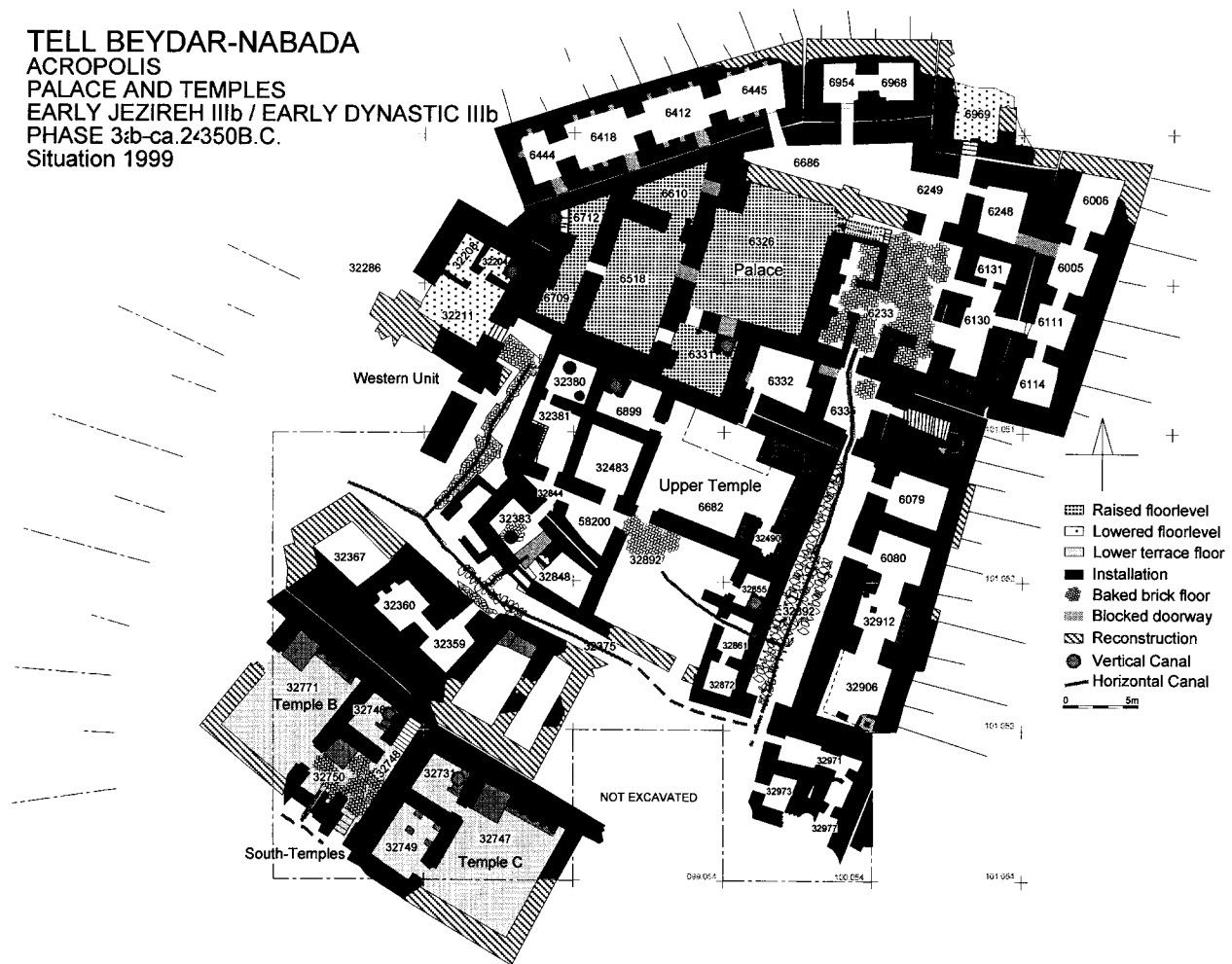


FIGURE 1. Schematic plan of the Early Jezireh IIIb palatial complex on the acropolis of Tell Beydar.

Jezirah IIIb period but it is not clear from which kind of installation it derives since the room was greatly erased by Akkadian structures. We picked up the main canal further east and its course leads to the drain that runs southwards. The north-south line starts as a well covered drain built with baked mudbricks from the main unroofed courtyard (Fig. 1, space 6233), through the small entrance room (Fig. 1, space 6335) and turns into an open sewer on the main paved passageway of the complex, see also Fig. 1, space 32892. This open drain portion is paved with broken sherds and constructed in a well laid stone floor. The sherds were cemented in a paste of pebbles and plaster lime which was kept in place by the gully left open in the middle of the stone floor. The sewer continues southwards and must be further excavated, but likewise seems to be covered halfway along its course.

The U-shaped upper part of the canal is built entirely with baked mudbricks, of which the top course was regularly covered with square or rectangular baked bricks. The minimal width of a canal was probably determined by the space needed to inspect or clean it. The maximal width inside the canal was limited to the length of the brick (36 cm). The 35–40 cm wide canal was regularly built with a bottom consisting of baked bricks (36 x 17 x 8 cm) placed against each other along their long sides, and linked with a mortar of almost pure reddish clay, see Fig. 2. The east side of the canal was built differently than the west side. The total height is approximately 40 cm, since the first row of bricks had usually a slight in-

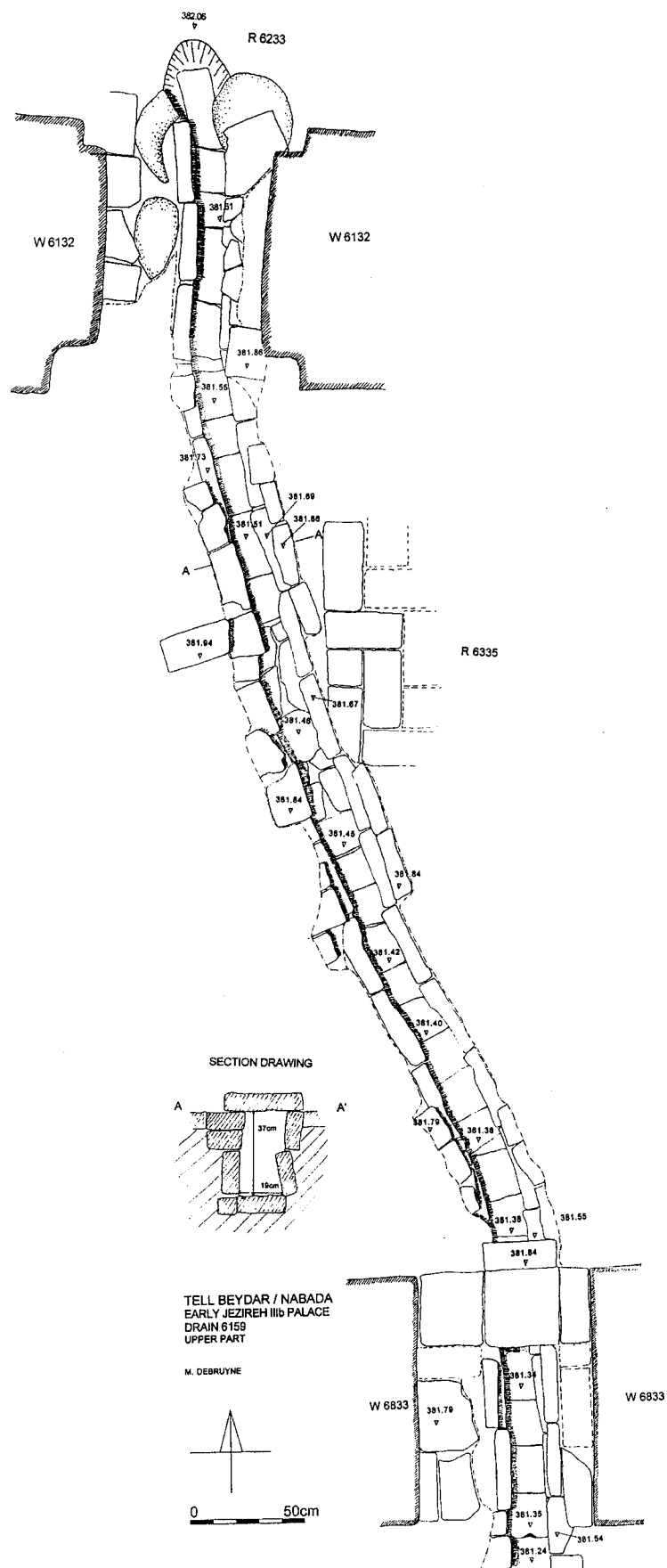


FIGURE 2. Drawing of the upper part of the canal running from the main courtyard 6223 through the entrance room 6335 towards the south.

cline to the inside and the top row was more sliding to the outside. The masonry was carefully laid out, avoiding large joints between the bricks and they were all firmly joined with reddish clay mortar. Although bitumen was known, being occasionally applied to waterproof a floor or to mend broken objects, no evidence was found of its use to waterproof brick joints in this particular case.

Two large stone slabs covered the drain at the doorway to the main courtyard, whereas to the south, the brick, which covered the canal, lay underneath a row of three baked mud-bricks that formed the doorstep of this doorway. Because no rainwater was meant to stagnate in the courtyard or the entrance room, the architects built the canal rather steeply in order to quickly evacuate the water. This also meant that the drain had to be high in order to deal with the waterpressure. Thus, besides the expensive material applied to construct these canals at Tell Beydar, good knowledge and experience in hydrodynamics were required in order to build them in the way they did. It is possible that rain water coming from the roofs of the nearby rooms were also led towards the entrance room, which, if this is the case, remarkably multiplied the amount of water that the baked brick floors of the two spaces (6233 and 6335) had to absorb. This may be the reason why the canal is built up rather high (up to 40 cm).

A general remark here is that we still don't know where these sewers lead to, but presumably towards the streets and along the gates further outside the city or to a collecting point. This is also worth investigating.

A second short horizontal drain was evacuating rain and waste water from the entrance room of temple B in the south of the complex, see Fig. 1 space 32750.² This entrance room had a well laid baked brick pavement in a herringbone pattern. It was sloping to an intake that was also collecting waste water from an installation and deviated the water outside the temple walls by means of a ceramic pipe, see Fig. 3. This pipe seems to be especially made for this purpose and reminds us of the similar ones found in South Mesopotamia during the Early Dynastic period.³ This is the first one of its kind attested in Beydar and implies strong links with Mesopotamia. Besides, the typical niched architecture of the temple strongly suggests influence from the south. The drain probably ends in an open yard before the temple or in a street sewer passing by the temple. This needs to be investigated next season.

Drains

In addition to the canalisation network, the “official block” is equipped with several sink traps⁴. Two of them were found in the first phase building (rooms 6181 and 6332), three others were attributed to the third phase (rooms 6331, 6610 and 6712). Those drains are also present in the three temples built to the south of the “official block” (Upper Temple, room 6899; Temple B, room 32746; Temple C, room 32731) as well as in a building (western unit, room 32218) situated on its west side, see Fig. 1. Canalisations and sink traps had to form an efficient evacuation network, the particularity of the sink trap being its ability to evacuate waste water from a specific area at minor costs.

2. Excavated by the Syrian team under the direction of Dr. A. Suleiman.

3. Comparisons of tubular ceramic pipes in Mesopotamia can be found by Delougaz Pinhas 1940, 123–5, fig. 14 and for North Mesopotamia see Strommenger Eva and Kay Kohlmeyer 2000: 37, Taf. 26 and 30.

4. A detailed description of these installations can be found in Van der Stede Véronique forthcoming.



FIGURE 3. View on the southern part of entrance room 32750 of one of the south temples with the ceramic pipe leading the water outside the temple walls.

The sink traps, whose depths can reach 19.5 meter, are equipped with large jars pierced in their bottom and piled up one into the other in a circular pit dug beforehand,⁵ see Fig. 5. A filling made of various materials accumulated between the pottery pipe and the sides of the pit ensures the stability of the jars.

Because of their great depth, it is very unlikely that those drains were connected with an underground draining system. Besides, such a system, difficult to install, turns out to be useless since the stagnant waters can be either absorbed by the earth at the bottom of the sink trap or by the surrounding soil.

In most cases the sink traps found at Tell Beydar are surmounted by an installation that appears in the shape of a rectangular bench built with mud bricks and entirely covered up with white plaster,⁶ see Figs. 4 and 6. Those benches are pierced on their upper face with a round or oval opening directly connected to the sink trap. They are often preceded by a low step cut in its centre by a little gutter allowing the evacuation of the waste water from the ground to the sink trap, see Fig. 4.

The function of those benches is not easy to determine. Several explanations, going from craft installations to toilet-like installations, have been proposed. What about the installa-

5. In other sites the jars are replaced by purposely made ceramic cylinders see Hemker Christiane 1993: 128–167 and Delougaz Pinhas 1940: 125–126.

6. Comparisons can be found in Delougaz Pinhas et al. 1967: 161, 176, 183–184, 187–189, Pls. 40–42, 68D, 75C/D; Frankfort Henry 1934: 11, Fig. 3; Stommenger Eva and Kay Kohlmeyer 2000: 33–37, Taf. 22 and 23.



FIGURE 4. Toilet-like installation in room 6331 of the upper laying levels of the official unit.

tions discovered at Tell Beydar? Since their shape is not sufficient to define their function, only the context in which they were found can enlighten us.

In Tell Beydar, those installations have generally been found in rooms of modest dimensions where the floor and the base of the walls are protected with plaster coating or baked bricks. The floor of these rooms is sometimes sloping in order to let water flow to the sink trap.

The presence of those waterproof coatings leads us to believe that water played a preponderant role in those rooms and it is tempting to identify them as “bathrooms”. Unfortunately the identification of those spaces as “bathrooms” does not allow us to ascertain the function of the benches drained by a sink trap since they could have been used as a “sink “ as well as a “toilet”.

Nevertheless the spatial organisation of the “bathrooms” of Temple B and C leads to lean towards the second solution. Indeed, the benches linked to a sink trap, which were uncovered there, are hidden from the entrance door by a screen wall sufficiently high to protect it from indiscrete glances. This search for intimacy seems to indicate that those installations played a role in activities of a private nature.

The fact that those installations are drained by sink traps instead of canalisations also would support this hypothesis. The sink traps, unlike the canalisations, lend themselves particularly well to the evacuation of excrements since they can accumulate in the pipe before being progressively absorbed by the ground.

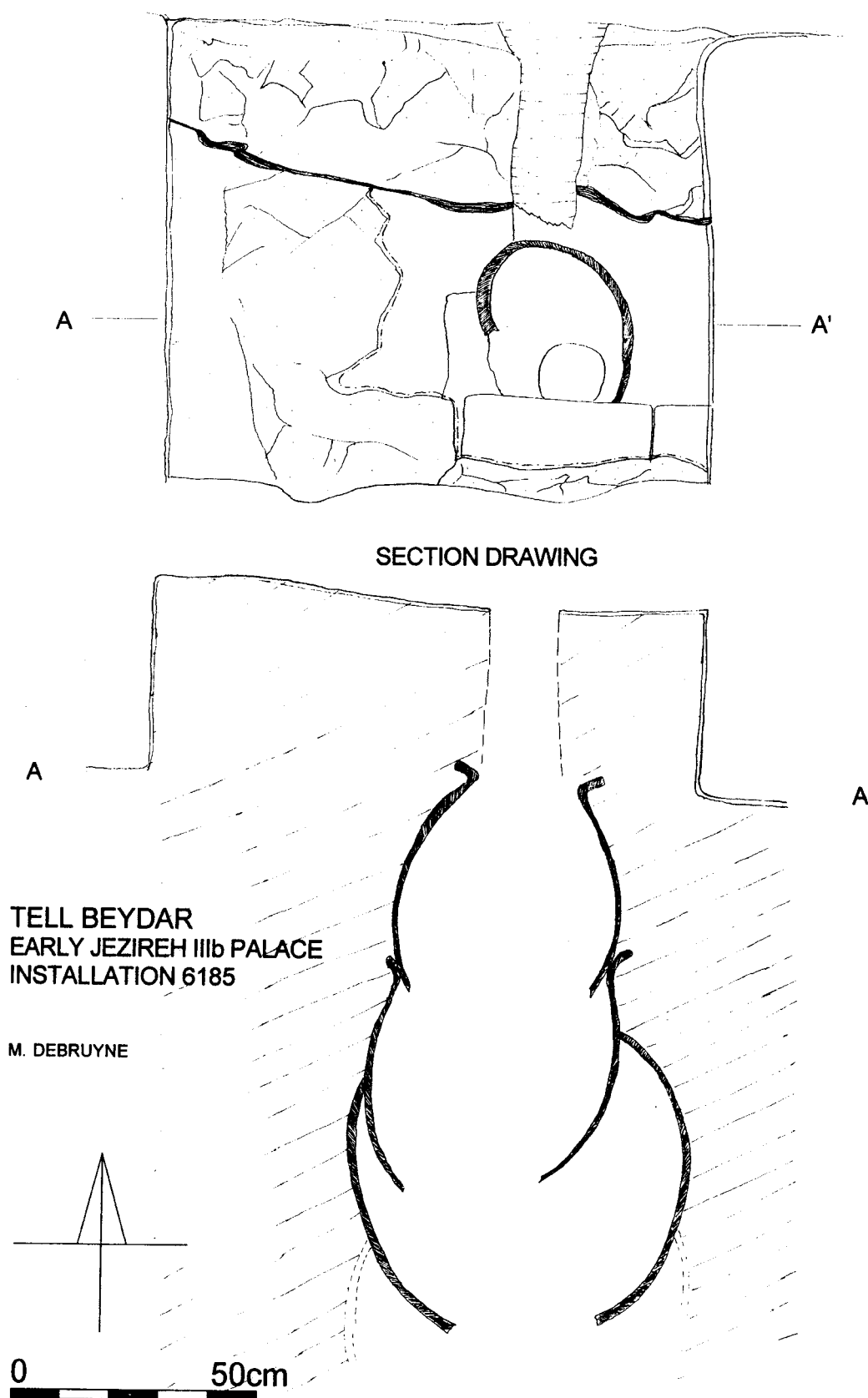


FIGURE 5. Drawing of a toilet-like installation of the palatial complex at Beydar with section drawing of situation concerning the vertical drain construction.



FIGURE 6. View of a toilet-like installation with separation wall in space 32746 of the temple complex in the south.

One last remark can be made regarding a specific artefact frequently connected with these installations, namely the "spindle-shaped clay bullet". Hundreds of artefacts of this type have been discovered in the inside as well as at the outside of the ceramic drains. The majority of these unbaked clay objects, whose length varies between 7 and 15 cm, are spindle-shaped but some of them have the appearance of cones with flattened ends or of elongated pyramids.

Although the artefacts of this type have often been described by the diggers as "sling bullets", this interpretation badly suits the spindle-shaped objects recovered at Tell Beydar, especially because of their large dimension. The discovery of those artefacts has aroused many reactions between the members of the mission. Some identify them as an early prototype of the modern toilet paper.⁷ However, this hypothesis seems unlikely; on the one hand because their repeated use would have, at the end, blocked up the sink trap, on the other hand because those artefacts also seem to have been used as building material.

Others suggest that these objects have been found in the drains in secondary context and would have been, at the beginning, little clay lumps ready for use to seal doors or containers.⁸ Once they became too hard and useless, they were thrown away. And so, those drains would have been a convenient place to discard them.

7. The soap/toilet paper hypothesis was proposed by M. Lebeau (director of the mission) and P.-L. van Berg (member of the ULB team).

8. This hypothesis was proposed by Ph. Talon (responsible for the ULB team) and by the authors.

A comparison of the clay of the sealings with the clay of the bullets supports this assumption. At Tell Beydar clay bullets samples have been processed with HCl and no reaction was observed.⁹ This would mean that the clay of these objects is comparable to the clay of the sealings, as well as of the tablets. This is still preliminary and has to be investigated more thoroughly in the future.

To conclude, we can state that in the Early Jezireh III period in North Syria the architects of Tell Beydar were well aware of different techniques to evacuate water. They were familiar with the general hydromechanics and showed their inventive skills in constructing drains and sewers of all kinds. They were also not limited in their choice of materials since baked bricks, stone and ceramics were applied depending on the kind of installation that was required. A general system in such an intense city planning seems to be likely. Hopefully we will be able to conduct further research concerning this matter in the near future. Once more these results can only confirm what has already been said. Drains and sewers are very important installations in mudbrick architecture and studying them properly will help us to better understand the technical ability of the architects during the third millennium B.C.

9. This experiment was conducted in Tell Beydar by K. Van Lerberghe (responsible for the KUL team).

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Recherches récentes dans le Moyen-Euphrate: Terqa et Masaikh (1999)

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Abstract

The Terqa regional project focused, in 1999, on two main programs: research on the third millennium levels in Terqa and enlargement of the exploration of the neo-assyrian levels in Tell Masaikh. In Terqa, it appears that the old babylonian administrative building of area F was built on an area of private houses dated, according to the ceramics, to the end of the third millennium B.C. (the so-called "shakkanakku" period). One of them, preserved on more than 1.5 m high, has been burnt by an important fire and yielded a large amount of ceramics, crushed in situ by the collapsing of the roof, some of them containing grain. The important inclination of some walls give the impression that some of the rooms were, at least partly, vaulted. In Masaikh, the large building we are excavating was the residence of a local assyrian ruler, and it shows the well known plan of this kind of building (reception room with rals, opening, on one side, on a large paved courtyard and on the other side on another long room. An important fragment of stele (the top part) gives an interesting text, beginning as a prayer to the god Nabu. Just before the beginning of the text, it is possible to read the name of Kar-Assur-nasirpal, probably the ancient name of Masaikh.

Le site d'Ashara-Terqa, fouillé depuis 1975, d'abord par une mission américaine puis par une mission française, a livré les restes d'une importante ville des troisième et second millénaires av. J.-C.: peut-être capitale de la région au début du Bronze ancien (vers 3000 av. J.-C. et après), elle devint un important centre provincial sous la domination de Mari, jusqu'à la destruction de cette dernière par Hammurabi de Babylone vers 1750 av. J.-C. Re-devenant alors capitale de la région, Terqa nous a livré des niveaux archéologiques importants jusqu'à la fin du Bronze Moyen et au début du Bronze Récent (1400 env.), qui constituent la principale documentation archéologique concernant cette époque pour toute la région du Moyen-Euphrate.

Toutefois, le site n'a livré aucun niveau archéologique cohérent ni pour la fin du Bronze Récent ni pour le premier millénaire av. J.-C., alors que différents indices, et en particulier les inscriptions royales assyriennes, attestent clairement pour ces époques la présence, dans la région, d'une organisation politique structurée.¹ C'est cette constatation qui nous a amenés, depuis plusieurs années, tout en continuant nos recherches à Terqa même, à élargir notre enquête à toute la région, explorant des sites des environs immédiats de Terqa, pour y trouver les informations que nous refusait le site principal. Notre projet a évidemment bénéficié des prospections déjà réalisées.²

1. Masetti-Rouault 2001.

2. Simpson 1984. Geyer & Monchambert 1987.

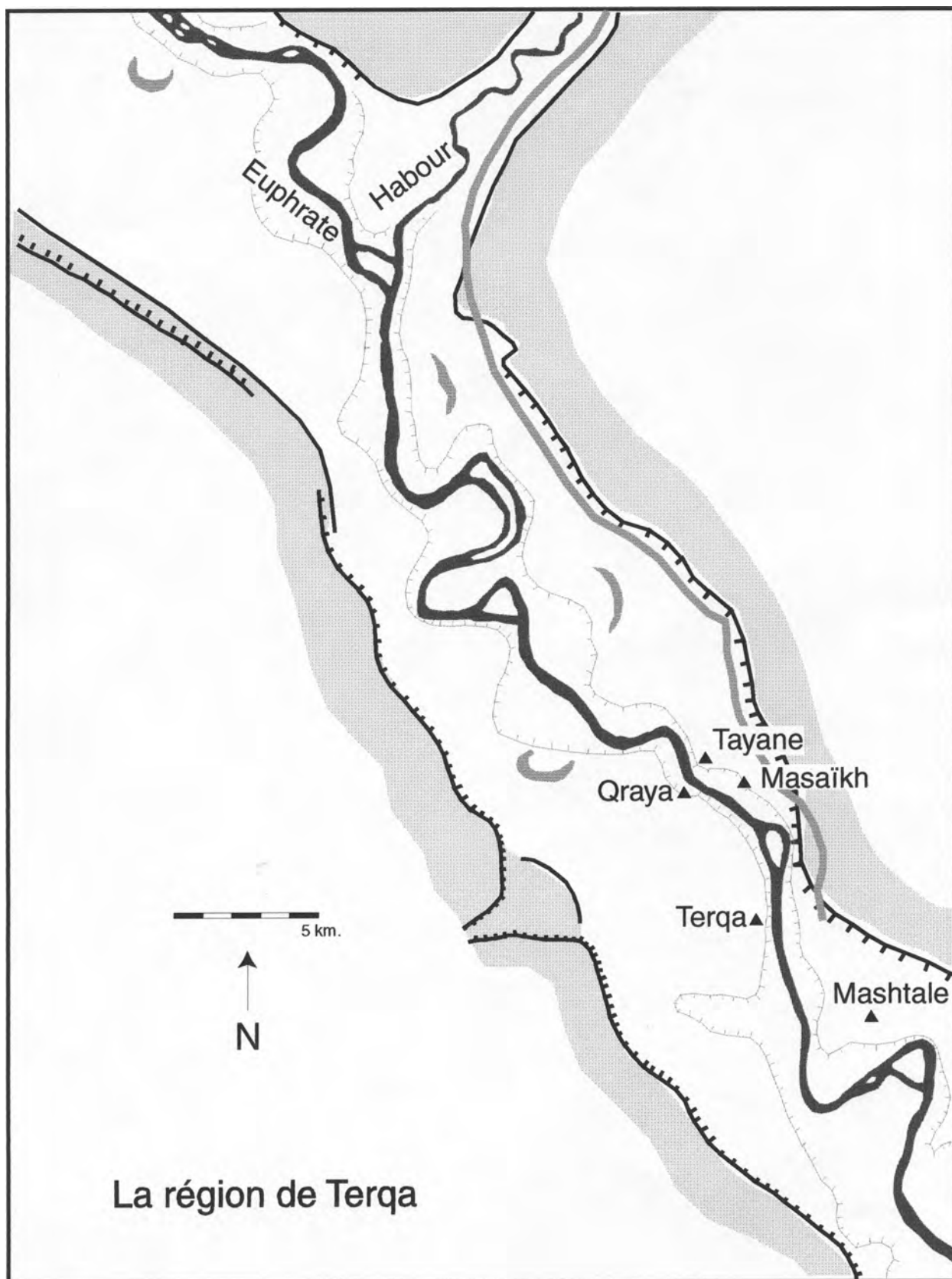


FIGURE 1. Carte de la région.

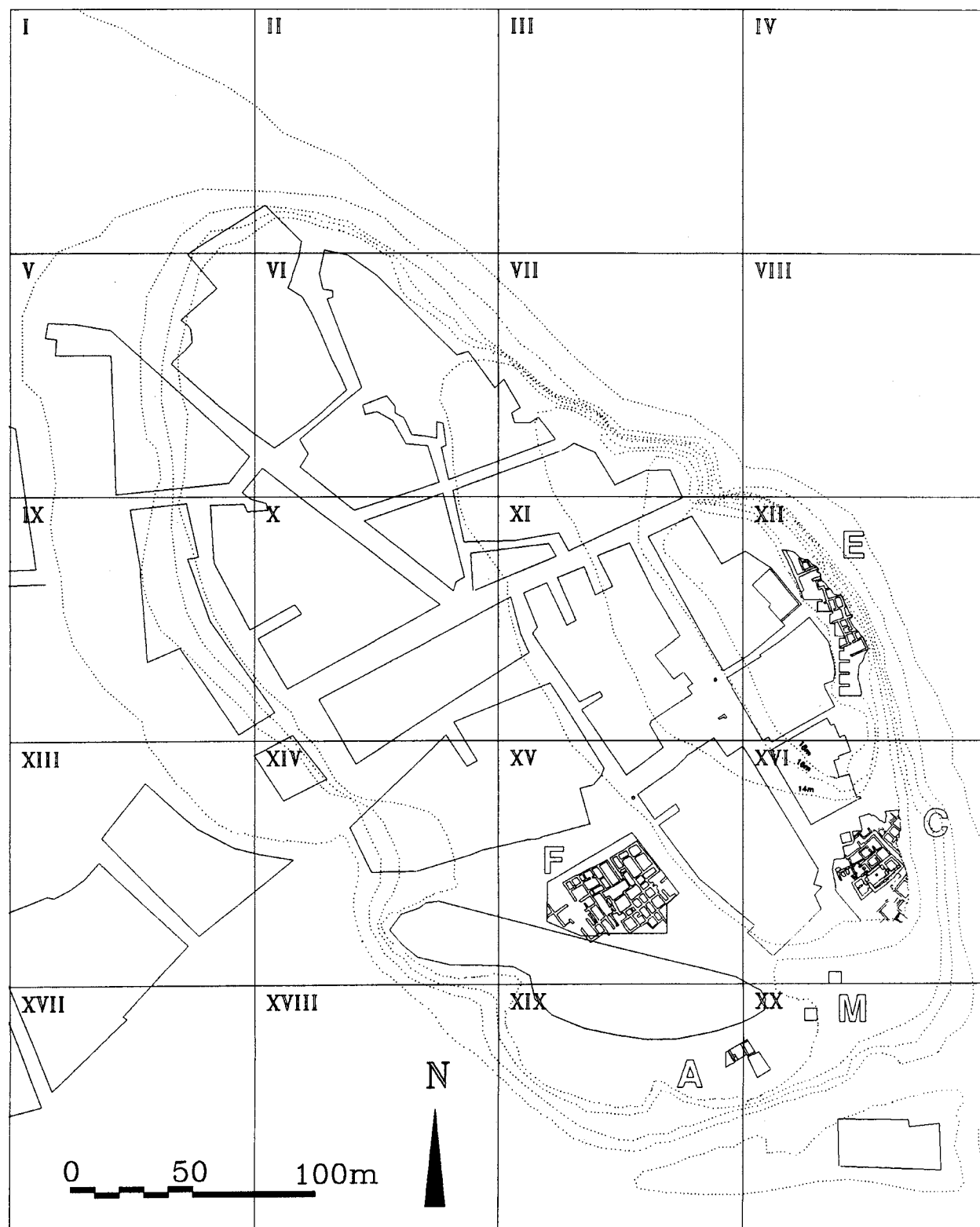


FIGURE 2. Plan général de Terqa.

Nous avons retenu dans un premier temps deux sites de la rive gauche de l'Euphrate, Mashtale et Masaïkh, qui nous ont permis de compléter la documentation fournie par Terqa. Le premier nous a livré, en 1996, un important niveau de la fin de l'époque kassite, caractérisé par la présence de "gobelets kassites" caractéristiques.³ L'assemblage permet de proposer une date aux alentours des années 1200. Il devient donc clair qu'à cette époque, alors que le site de Terqa n'était manifestement plus qu'un cimetière, le Moyen-Euphrate était encore marqué par l'influence de la Babylonie et n'était pas complètement livré à la colonisation médio-assyrienne. Nous espérons, dans les années à venir, pouvoir étudier de façon plus approfondie cette "rencontre" des Assyriens et des Babyloniens dans le Moyen-Euphrate à cette époque. Le second site, Masaïkh, nous a livré un niveau halafien (6^{ème} millénaire av. J.-C.) très inattendu dans cette partie méridionale de la vallée, ainsi que de très importants témoignages—stratigraphiques, architecturaux et épigraphiques—de l'occupation néo-assyrienne de l'époque du Fer II, que nous avons en vain cherchés à Ashara-Terqa.

Nos travaux en 1999 ont donc eu pour but de faire avancer les différents aspects de cette problématique régionale cherchant à reconstituer l'histoire de cette partie de la vallée du Moyen-Euphrate depuis la protohistoire jusqu'à l'époque classique. Une première série d'opérations a concerné le site de Terqa lui-même, où il nous reste encore à étudier les niveaux du troisième millénaire av. J.-C., qui restent trop mal connus. La seconde série d'opérations a concerné le site voisin de Masaïkh, sur lequel nous avons étudié les niveaux pour lesquels Terqa même ne nous apportait aucune information: ceux de l'époque de Halaf, de l'époque néo-assyrienne, et de l'époque partho-romaine.

A Terqa, les niveaux les plus anciens n'avaient été mis au jour de façon relativement extensive que dans le secteur de la grande muraille, à l'endroit où elle a été coupée par l'Euphrate.⁴ L'étude des niveaux hanéens et paléobabyloniens du chantier F étant pratiquement terminée et la publication des résultats en préparation, nous avons décidé de continuer le démontage des structures récentes afin d'étudier en extension les couches plus anciennes. Des sondages déjà réalisés sous le niveau paléobabylonien, dans des espaces trop limités,⁵ ne nous avaient pas permis de comprendre l'ordonnancement des vestiges anciens, mais nous avaient montré la présence de constructions importantes, sans doute abandonnées pendant une assez longue période avant la reconstruction paléobabylonienne. Par ailleurs, les fouilles de 1997 avaient permis de mettre au jour, dans la partie nord-est du chantier, deux pièces⁶ préservées sur une hauteur de près de deux mètres, couvertes d'un épais enduit brûlé, montrant plusieurs phases d'utilisation et livrant des tessons et des récipients céramiques typiques de la fin du troisième millénaire. Le bon état de préservation de ces constructions nous permettait d'espérer retrouver une ville du Bronze ancien mieux préservée que celle du Bronze moyen et récent, qui ne nous livre en général qu'une architecture rasée au niveau de ses fondations.

Nous avons donc consacré cette saison, dans le chantier F, à deux types d'opérations: démontage des murs paléobabyloniens et des bermes devenues inutiles, et recherche de l'ensemble des constructions de l'époque précédente. Le premier type d'opérations nous a permis d'effectuer des vérifications stratigraphiques. Nous avons ainsi pu compléter le plan des constructions du second millénaire et mieux en comprendre la logique, en vue de la publication

3. Rouault 1998.

4. Buccellati 1979: 42 ss.

5. Voir par exemple le sondage F3k1, Masetti-Rouault 1997.

6. Voir Fig. 6, espaces n° 2 et 3.

finale. Le démontage des murs paléobabyloniens nous a aussi apporté une importante moisson d'objets, sans doute insérés entre les briques par accident ou pour des raisons votives et religieuses: épingles en bronze, cornes de gazelle, fragments de figurines, fragments de scellements, perles en pierre semi-précieuse. La découverte la plus frappante est celle d'un trésor disposé dans une cache aménagée dans un mur: dans une petite jarre se trouvaient des bijoux en or, lapis-lazuli, cornaline, agate et argent. Six perles en feuilles d'or de forme côtelée, sur un cœur en bitume, sont assez bien conservées. Divers objets en argent (bagues, bracelets, pendentif en forme de croissant lunaire) devaient être en bon état au moment de leur enfouissement, et n'étaient donc sans doute pas destinés à une réutilisation artisanale immédiate (Fig. 3).

A quelques centimètres du trésor se trouvait un dépôt d'objets en bronze, aussi en très bon état: deux sortes de louches, l'une très fine avec le manche décoré d'incisions, l'autre plus grande, et avec le bord ourlé; une scie enroulée sur elle-même et des fragments de scie; une petite hache; un grand couteau à la forme dissymétrique; une lance; plusieurs bracelets, bagues et une épingle (Fig. 4). A part la grande louche à bord ourlé, l'ensemble de ces objets a été trouvé en bon état, et méritera restauration pour être conservé comme tel. Le trésor et le dépôt d'argent sont d'époque paléobabylonienne (phase II.1).

Le démontage de ces murs nous a aussi confirmé que les ouvertures n'apparaissaient jamais au niveau des fondations. Il nous a permis aussi de constater de grandes différences d'élévation entre différentes parties du chantier: au centre devait se trouver, au moment de la reconstruction paléobabylonienne, une dépression au fond de laquelle a été construite la première pièce, le locus k118 (Fig. 6, espace n° 1). Les autres constructions successives ont progressivement nivelé ce vallonnement et fait disparaître le relief hérité de l'époque plus ancienne.

Au fur et à mesure du démontage des murs paléobabyloniens, nous avons pu mettre au jour le plan d'une série de bâtiments, pour la plupart couverts du même enduit brûlé que celui des pièces n° 2 et 3 (Fig. 6), et très souvent séparés les uns des autres par des murs non mitoyens. L'étude attentive de ces murs, et surtout des parties les plus hautes, nous a montré qu'il pouvait s'agir de structures voûtées, ou semi-voûtées, un mur montant progressivement en voûte se trouvant toujours en face d'un mur vertical (Fig. 5). La présence de voûtes a aussi été documentée horizontalement, par la découverte de parties hautes de voûtes soit complètes, soit effondrées d'un seul bloc: on voit sur le sol, après nettoyage soigneux, une série de briques allongées et de petite dimension, qui sont en fait des briques normales se présentant de champ, et constituant le dos de la voûte. Nous n'avons toutefois pas pu, dans l'état actuel des fouilles, dégager une voûte complète, ni estimer la hauteur de ces constructions, qui devait en tout cas dépasser les 2 mètres 50. La présence, dans les remplissages, de restes de plafonds, laisse à penser que certaines couvertures n'étaient pas voûtées. Les murs de ces pièces voûtées ou partiellement voûtées sont apparus sur une grande partie du chantier, et on peut déceler plusieurs phases d'occupation et de reconstruction—au moins deux. La découverte, dans certaines pièces, d'importantes quantités de céramique et surtout de jarres de stockage, fait penser à une utilisation comme entrepôts. Un espace ouvert (espace n° 4, Fig. 6), au nord du chantier, malheureusement très perturbé par le creusement de nombreuses tombes plus récentes, a livré un sol présentant d'importantes traces de brûlé, associé à plusieurs foyers et tannours—dont l'un contenant du grain carbonisé—et pourrait avoir été consacré à des activités artisanales ou de transformation alimentaire. C'est dans cet espace que nous avons trouvé, lors d'une récente mission, un moule à outils et à armes qui, il est vrai,



FIGURE 3. Le trésor du chantier F (photo TQ200812).

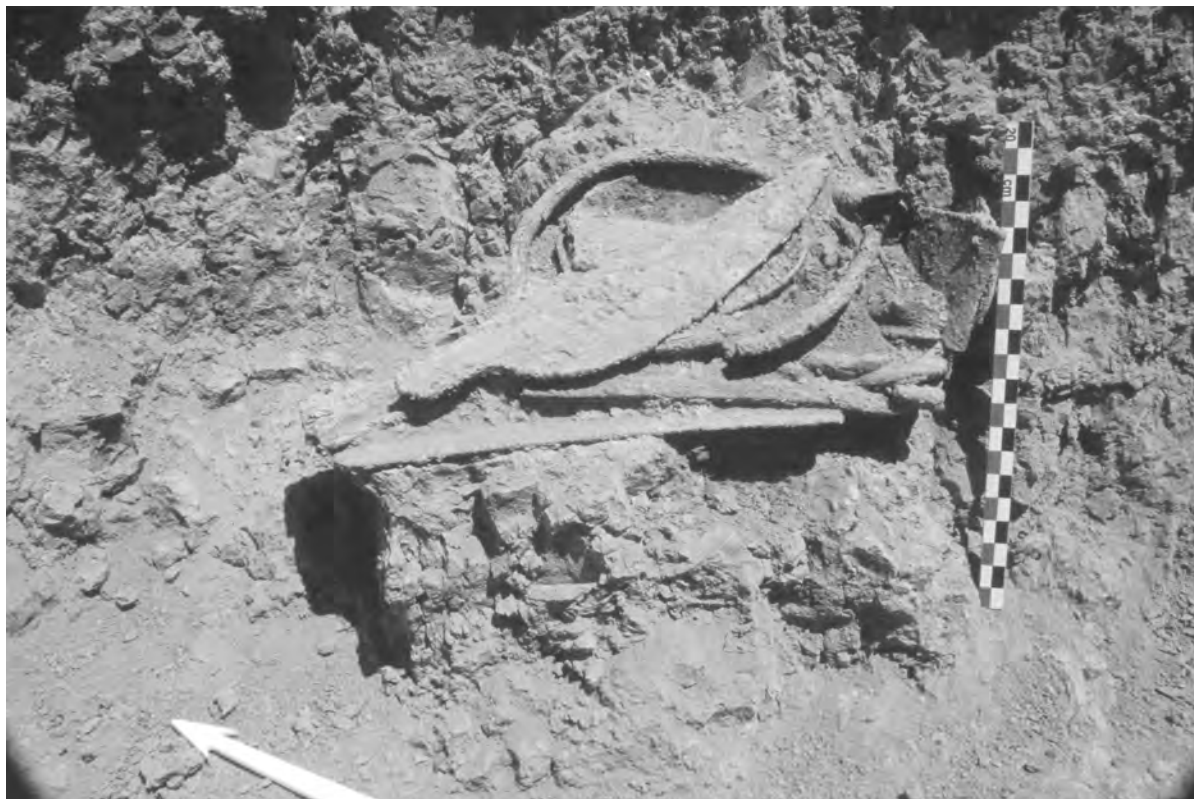


FIGURE 4. Les ustensiles en Bronze, chantier F (photo TQ200837).



FIGURE 5. Vue des murs inclinés (départs de voûte), chantier F (photo TQ201410).

se trouvait dans un contexte stratigraphique peu clair de fosses perturbées par des écoulements modernes.

La mission de 1999 à Terqa a donc livré de nombreuses informations nouvelles: les bâtiments administratifs du second millénaire avaient été construits sur un quartier de petites maisons en partie consacrées au stockage de denrées dans des pièces semi-voûtées et soigneusement préparées pour cet usage. Il conviendra, la prochaine saison, de fouiller les espaces et les pièces ainsi repérées, puis de continuer l'étude des niveaux encore plus anciens: il reste encore environ cinq mètres de dépôts anthropiques sous la cote la plus basse atteinte cette année.

Partant des informations récoltées sur le site lui-même, notre problématique historique et archéologique a toujours été régionale, et c'est à cette logique que correspondent les opérations menées sur d'autres sites, et en particulier à Tell Masaikh, sous la responsabilité de M.G. Masetti-Rouault. Tell Masaikh est une colline de dimensions assez importantes, environ 9 hectares et demi, située actuellement à moins d'un kilomètre de la rive actuelle du fleuve, juste en face du tell de Qraya où avaient été découverts, dans les années 80, des niveaux archéologiques d'époque Obeid et surtout Uruk récent.⁷ La structure régulière de Tell Masaikh, presque rectangulaire, ainsi que l'analyse de la céramique de surface, ont souvent fait penser qu'il s'agissait des vestiges d'une forteresse parthe, sassanide, ou même islamique. Le tell de Masaikh avait déjà été reconnu par A. Musil, qui en avait parlé dans le récit de sa reconnaissance dans le Moyen Euphrate publiée en 1927, avec un croquis du

7. Simpson 1988.

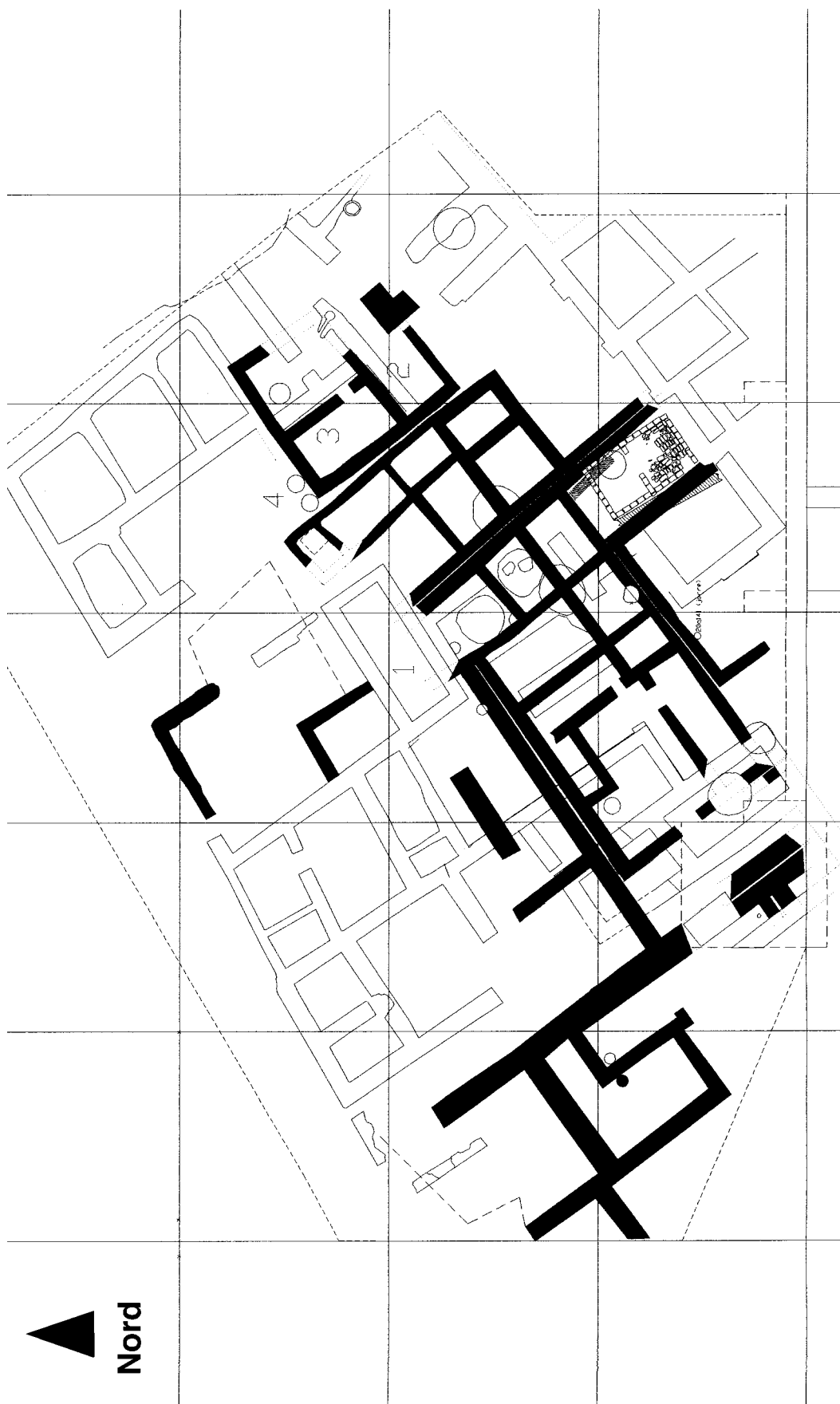


FIGURE 6. Terqa. Plan schématique du chantier F, mettant en relief les constructions de la fin du III^e millénaire (chaque carré fait 10 mètres de côté et le plan est orienté au nord).



FIGURE 7. Masaikh. Plan général du site.



FIGURE 8. Masaikh. Le grand mur de pierre au nord-ouest du site (photo TQ201516).

plan des ruines de Masaikh,⁸ sans toutefois avancer une réelle hypothèse de datation ou d'identification de ces vestiges à partir des constructions ou des matériaux examinés.

C'est à l'occasion d'un sondage à la base du tell que sont apparus des niveaux d'occupation d'époque Halaf, caractérisé par quelques restes de murs et des foyers, indices d'activités essentiellement domestiques. Aucune architecture halafienne clairement identifiable n'a malheureusement pu être mise en évidence dans l'espace de ce sondage. Les vestiges archéologiques comprennent des tannours, de dimensions variables, avec plusieurs phases d'utilisation, et surtout un matériel céramique peint abondant, associé à une quantité relativement importante de lames d'obsidienne. Il est probable que l'habitat s'est concentré plus à l'intérieur du tell, ne serait-ce que pour éviter une proximité trop grande par rapport aux inondations potentielles qui pouvaient toucher la bordure du site.

Les couches contenant de la céramique halafienne sont associées, dans le sondage, à un grand mur en pierre (Fig. 8),⁹ repéré sur plus d'une trentaine de mètres de long. Large d'environ un mètre et demi, et haut de plus de deux mètres (la hauteur totale n'a pu être évaluée en raison de la présence de la nappe phréatique), ce mur est construit sur un soubassement de blocs peu réguliers de calcaire dur. Sa partie supérieure comporte aussi un assemblage de

8. Musil 1927: 176–178.

9. Rouault 1998: 196 et Fig. 6. La section, analysée lors du sondage initial, semblait montrer que les niveaux d'occupation d'époque Halaf étaient directement associés au mur. Les recherches de cette année et le dégagement réalisé sur une partie de sa surface, semblent indiquer que le mur est en réalité intrusif dans ces couches anciennes.



FIGURE 9. Masaikh. Vue générale de la résidence assyrienne (photo TQ202631).

galets, de terre et de sable. De nouvelles recherches, réalisées par D. Beyer, semblent montrer que le mur n'était pas à l'air libre mais enterré, ou au moins appuyé contre des couches préexistantes. Il pourrait donc être plus récent. Si le mur est postérieur à l'époque de Halaf, une datation néo-assyrienne pour une construction de ce type pourrait naturellement s'accorder avec l'ampleur des travaux de cette période sur le tell (chantier E), mais les éléments dont nous disposons sont encore assez ténus et il faudra suivre le mur sur une plus grande distance et réétudier son contexte pour arriver à des conclusions plus définitives.

D'après les travaux des années précédentes, nous savions que les murs et les sols repérés dans le chantier E, sur l'éminence principale de cette partie du tell, appartenaient à un bâtiment important de type officiel et non domestique. Cette année, nous avons continué à dégager la grande cour pavée vers le sud et l'est en cherchant ses limites sans les avoir encore atteintes après en avoir mis au jour quelques 250 m². Il apparaît clairement que nous sommes dans la partie nord-ouest d'une grande cour pavée de briques cuites de couleur rose-orangée (45/45/8 cm. et 36/36/8 cm.), et montrant une pente vers le sud (Fig. 9).

Un seuil fait de deux pierres, large de plus de trois mètres sur deux et profond de deux mètres, sépare la cour d'une grande pièce d'apparence barlongue dont les limites exactes n'ont pas encore été repérées. Le sol est fait de briques crues couvertes d'une couche de djuss blanchâtre. Une double ligne de plaques rectangulaires de gypse blanc marquées d'un sillon central court d'un côté à l'autre de la pièce dans le sens barlong: il s'agit sans doute des rails destinés à supporter un système de chauffage mobile, bien connu dans les résidences de prestige et princières assyriennes. Cet espace, qui était sans doute couvert, et dont l'agencement est exactement celui d'une "salle de réception" de palais ou de résidence officielle as-

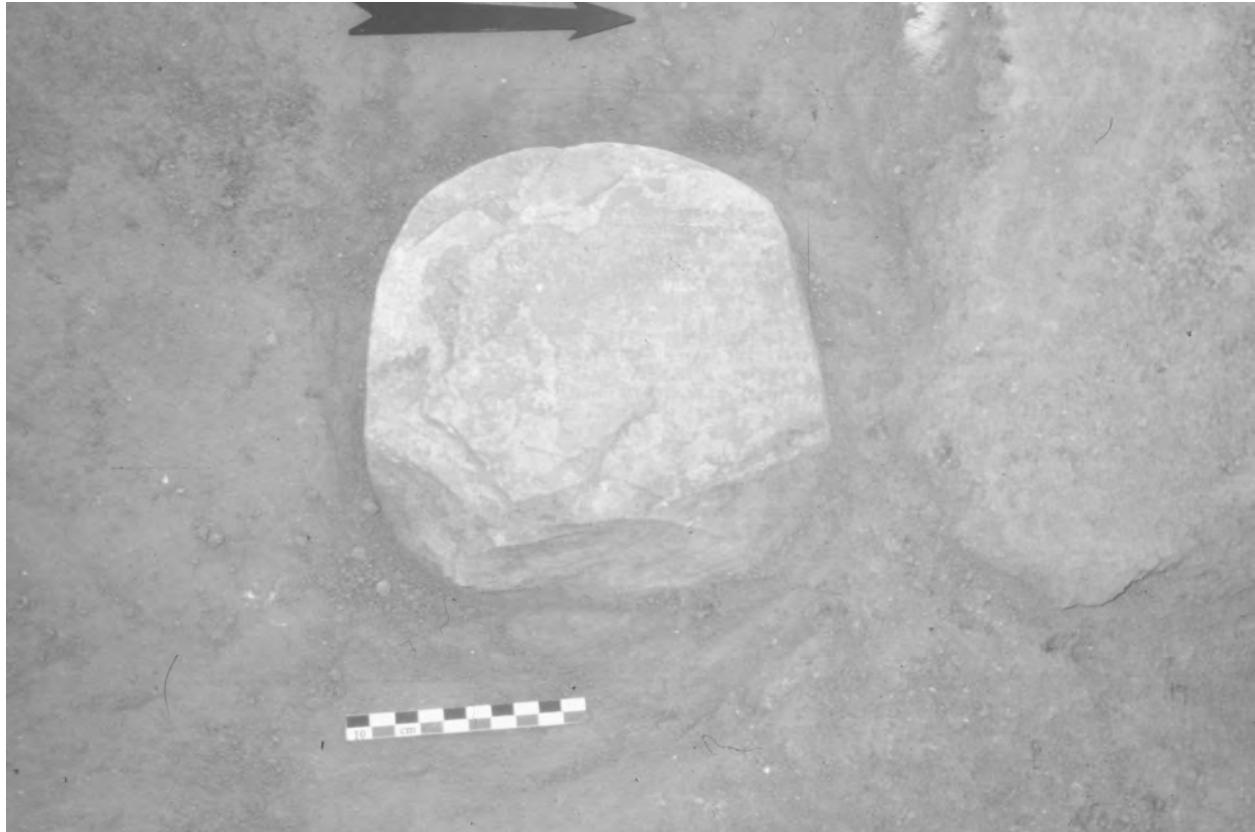


FIGURE 10. Masaikh. La stèle in situ (photo TQ201032).

syrienne, n'est pas encore complètement dégagée au nord. On y a trouvé très peu de céramique, mais quelques fragments de palace-ware ou imitation locale viennent confirmer la datation néo-assyrienne suggérée par la disposition générale du bâtiment.

A la fin de la période d'utilisation du bâtiment, les sols de la grande cour ont été très abîmés (dalles déplacées, traces de feu) et il a été recouvert, ainsi que le sol de la pièce voisine, d'une couche d'argile brune très pure et compacte, sans inclusions, qui paraît avoir été déposée au même moment de façon homogène, en plusieurs couches régulières. La surface a été utilisée par la suite comme nouveau sol. C'est dans cette couche de remplissage qu'a été retrouvé, dans la pièce nord, un important fragment de stèle—sa partie supérieure—portant une inscription (Fig. 10). D'après une rapide étude préliminaire, par M.G. Masetti-Rouault, il s'agit d'une sorte d'ex-voto, ou de prière, dédié au dieu Nabu, dans lequel un personnage important semble évoquer son retour à la bonne santé après une vie de souffrance depuis l'enfance, et relate sans doute ses activités sur le site, mais les détails ont disparu dans la cassure. Diverses caractéristiques du texte, ainsi que l'étude du contexte historique permettent de proposer une identification avec Kar-Assur-nasirpal.¹⁰ Masaikh serait donc le site de cette installation fondée dans le pays de Laqê par Assur-nasirpal II, au 9^{ème} siècle av. J.-C., en face de Nebarti-Assur. Cette dernière localité, d'après son nom, est clairement associée à un gué ou à un lieu où il est possible de traverser le fleuve. On avait proposé d'identifier ces deux localités aux sites connus plus tard sous le nom de Halebiye et Zenobiye, et il s'agirait donc plutôt de Masaikh et du site de Greya qui lui fait face de l'autre côté du fleuve.

10. Rouault-Masetti 1999: 136.

Il est difficile pour le moment d'évaluer la durée de l'occupation assyrienne à Masaikh, après la crise et l'abandon du bâtiment officiel, et de préciser la date à partir de laquelle la construction des murs et de sols hellénistico-parthes commence. Elle devrait être contemporaine de celle de l'édification de l'enceinte: la résidence assyrienne, en partie remblayée, serait alors devenue une sorte d'acropole, lieu d'observation pour contrôler la vallée. De toute manière, la construction de cet ensemble a demandé un grand effort de renforcement et de terrassement du tell du côté ouest, destiné à le protéger des inondations et des alluvions de l'Euphrate, qui pourtant va par la suite éroder profondément le coin sud-ouest du site. Quant à l'époque islamique, elle n'a pas laissé de traces cohérentes d'habitat dans cette partie du tell, mais nous savons que plus au sud, une des éminences du site, encore utilisée comme cimetière, présente une importante concentration de tessons glaçurés.

Il est donc maintenant évident que le site de Masaikh peut fournir une documentation importante pour des périodes qui sont mal attestées, ou même pas attestées du tout, dans le Moyen-Euphrate. Il mérite une étude approfondie, qui va fournir des perspectives nouvelles à nos connaissances de l'histoire de la Syrie antique. En outre, les résultats de ces recherches montrent bien l'intérêt d'une approche régionale: l'étude du site de Terqa continue à fournir des renseignements de première importance, mais doit être combinée avec des recherches sur les sites les plus voisins qui relèvent de la même logique historique et environnementale. Toutes les périodes sont ainsi documentées: Halaf et peut-être plus ancienne à Masaikh, Dynastique archaïque à Terqa, Bronze moyen à Terqa et à Masaikh, Bronze récent à Terqa et à Mashtale, Fer et époques classiques à Masaikh et Mashtale. Ce n'est que de cette façon que nous pourrions comprendre l'évolution de cette région et évaluer son rôle dans l'ensemble de l'histoire mésopotamienne.

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The Excavation of the Northern Fortress at Tell Mardikh-Ebla

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Introduction

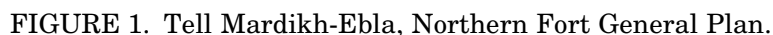
The excavation of the Northern Fort (Fig. 1) began in the autumn of 1996 after an accurate survey of the area to extend the research of the fortification system of the Middle Bronze Age in Ebla (c. 1950–1600 B.C.). The Fortress M had previously been excavated in 1971 on the southeastern sector of the rampart and the V Fort in 1995¹ on the central-eastern front. Both of these defensive structures have shown many similarities in dimension and in planning; formed by a stairwell with external access and six smaller rooms that do not appear to have passages between them and the stairwell, makes an entrance from an higher level conjecturable. Unlike to Fortress M which, having had no further surveys, presents itself as an isolated defensive structure, the North Fort appears to be formed by a functionally more articulated complex, characterized by an open central court building and by three wings of rooms that delimit it. The function of these rooms is tied to the activities that take place in the fortress itself.

The Northern Fort is in terms of planning and function of the same type as the M and V Fort: formed by a Fortress homogeneous in dimensions and plan, with the annex rooms organized to the South of the defensive part on two parallel lines at different levels and separated by a terrace wall with N-S orientation (M. 7330, M. 6954).

At the present state of the excavations, which are still taking place, the measurements of the entire building are 51 m in length and ca. 50 m in width; as none of the boundaries of the Northern Fortress have so far been excavated, these measurements could still change. Relatively easier to understand are the limits of the building in the North-Western sector of the complex on the top of the fill. Of this structure, that extends for ca. 30 by 15 m, all the perimeter walls are known except the northern wall of which remains only a small ruin (M. 6919).

At the western end of the Fort the known limit is formed by M. 6958 for the sector closer to the Fortress, whilst more to the south the pre-existing wall M. 7353 marks the limit of the surveyed area. The complex that can be seen to the south of the Fortress is formed by two

1. The M Fortress has a length of 27 x 12.5 m and the thickness of the perimetric walls varies between 2.5 and 3 m. The V Fortress reaches a length of 26 m, while the preserved width is of 10 m Matthiae Paolo, Ebla. Un impero ritrovato, 1971 Einaudi; Peyronel Luca, in press 1998 The Middle Bronze II Fortress V at Tell Mardikh-Ebla (Syria). Analysis of Architectural Contexts and Archeological Material. Paper presented at the 1st International Congress on the Archeology of Ancient Near East (1st ICAANE), Rome May 18th–23rd, 1988.



The succession of rooms on the internal side of the rampart is characterized by three pairs of other rooms followed to the south by an alignment of three individual ones. In front of these rooms are fragments of walls and channels in a bad condition of preservation that suggests another eastern extension of the complex. The last excavation campaign has allowed us to discover, in the northwestern sector of the area, the presence of a big brick wall, M. 7369, that lies in the N-S direction and to the east limits an open court.

The excavation of the AA sector that extends for approx. 2500 m² on the northwestern sector of the rampart, has allowed us to verify—even if not clearly—the existence of a building phase tied to EB IVB, whilst that of the EB IVA is so far only an hypothesis. Sporadic

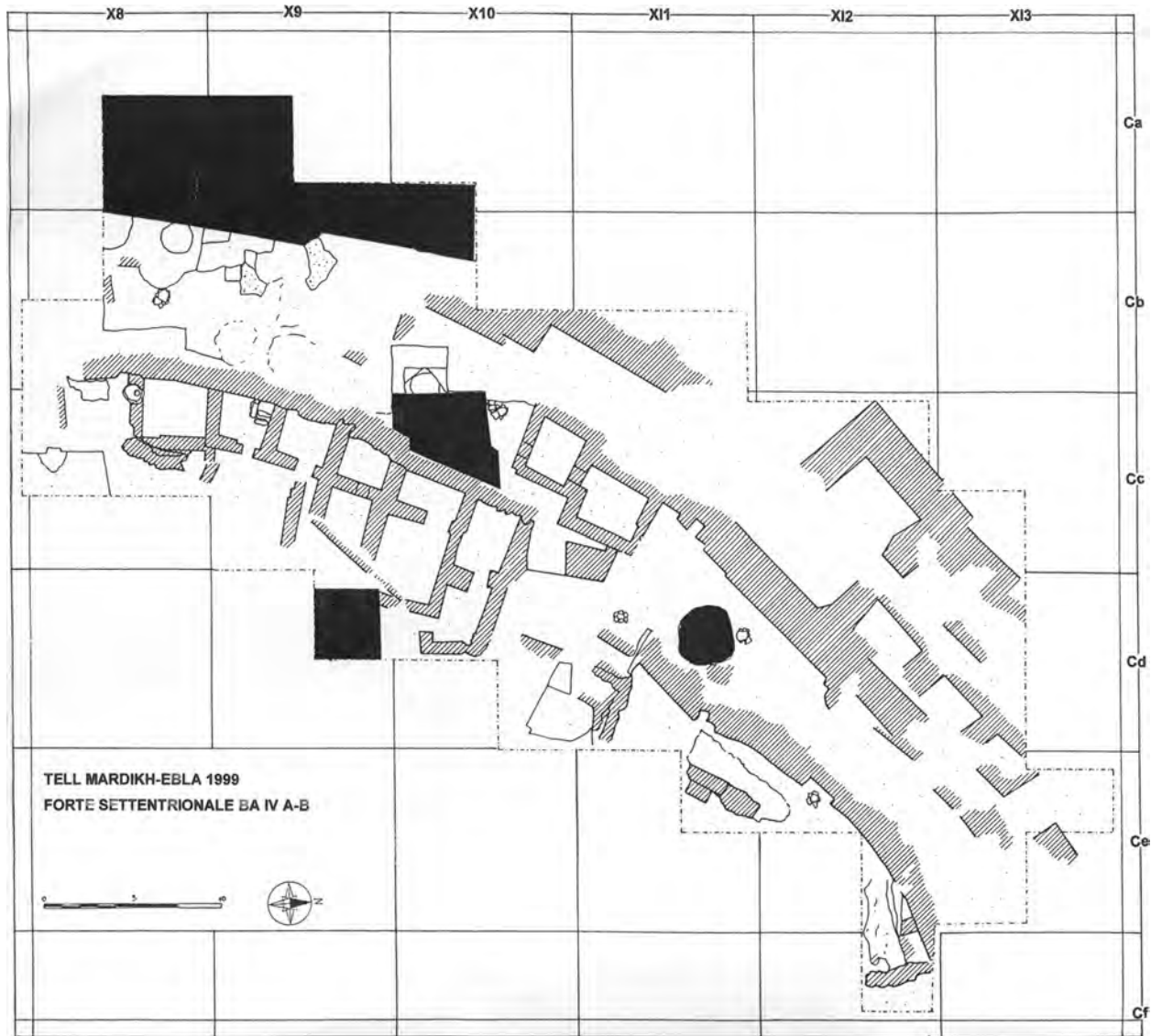


FIGURE 2. Tell Mardikh-Ebla, EBIV A-B Phase.

traces were found at the beginning of the first excavation campaign, basically connected to the ceramic evidence of EA IVB, their presence is explained by the fact that this material was used for the building of the rampart.

It has been possible to verify the connection of the ceramic with parts of walls, visibly cut by F. 7247, on the south side of the Fortress, already in the first excavation campaign.

This pit proved to be a result of a collapse of the ground. The entrance was a smaller opening progressively widening towards the bottom. Inside the deposit was very friable and mainly made up of burnt bricks that had fallen inside; the related MB II ceramic in the deepest levels of the pit and next to the afore mentioned walls was preceded by that of EB IV B and only by some fragments of EB IV A. These walls, as they are present on two non-consecutive sections of the same F. 7247, belong to two separate structures. A further element of chronology of these structures is given by the quality of the clay of an intense red colour which characterizes the bricks of the end of the third millennium B.C. in this site.

During the 1997 campaign, the presence of a proper building phase tied to BA IV B has become clearer consequently to certain findings belonging to this phase: an earthen floor

next to D. 6954; disrupted levels by depositions D. 6997, D. 6998, D. 6999; the boundary wall of the excavation area M. 7357, on the top of the wall, on the western limit of the excavation itself. The floor L. 6982 characterized by fine soil, ashy on the eastern side and more red and solid on the west side, was cut by the deposition pit D. 6980. This floor, which can be dated to BA IV B according to the ceramic evidence, doesn't appear to be connected to any chronologically pertinent structure. It was reused as a pre-existing element and was included in the Fort during BM II.

The depositions D. 6997, D. 6898, D. 6999, located in the central part of the easternmost side of the excavation area, have cut the levels of BA IV B, which are characterized by an ashy ground and by ceramic of this chronological phase.

The nature of this soil, partly similar to that of floor L. 6982, suggests that especially in this second instance it is residue soil of the filling of the rampart. This level shows a ceramic range of EB IV B type together with a terracotta female figurine of a well known type during EB IV A. This figurine, found immediately under D. 6999 seems to be related to D.6999. This finding suggests that this typology lasts from BA IV B to BM I, especially in very conservative contexts like depositions.

The M. 7357 wall, at the south-western limit of the excavation, is one of the most important finds in the last five years of excavations of the entire site. This wall runs NE-SW measuring in length ca. 19 m, in width ca. 7 m, its depth is ca. 4.40 m. Evidences of significant stratigraphic and building elements allow to date this wall to EB IVB. M 7357 is built in bricks of red clay of the well-known dimensions—ca. 60 x 40 cm—used in the Palace in EB IV A, the internal side of the wall had been completely obliterated by the debris of EB IV B, used in the building of the rampart, as we can see in other areas of the Tell. The pottery of this level is mostly of the painted type of EB IV B, in shape of the caliciform goblet, even though we can find the corrugated goblet and the fillet rimmed bowls, more frequent in EB IV A.² All these elements allow us to think that this wall was in use during the EB IV A, although the foundation level and subsequent connected floor has not yet been reached.

Clear is the function of M.7357 in BA IV B as the rampartlayers that have hidden its face must have been made only when the major building, during this phase, was already out of use at the very beginning of BM I: in this sector of excavation are to be found many depositions of BM I dating.

Summarizing it is possible that the M. 7357 was built in EB IV A, connected with the most important phase of growth of the site, as can be seen from the findings of the Acropolis M.7357 certainly was also in use in BA IV B, but by the end of this phase it became the internal wall of the fill. Interesting is the non-direct continuity but only the linear orientation between the afore mentioned wall and that of the delimitation of the Fort of BM II.

The MB I depositions (Fig. 3)

The investigated area was used in the initial phase of BM I as a cemetery.³ There are 15 homogeneously distributed depositions in all the excavated area. They can be grouped into two categories: adults and children. In the first group are those made of a dug-out grave in

2. Matthiae Paolo, Ebla. Un impero ritrovato, 1971 Einaudi.

3. Baffi Guardata 2000.

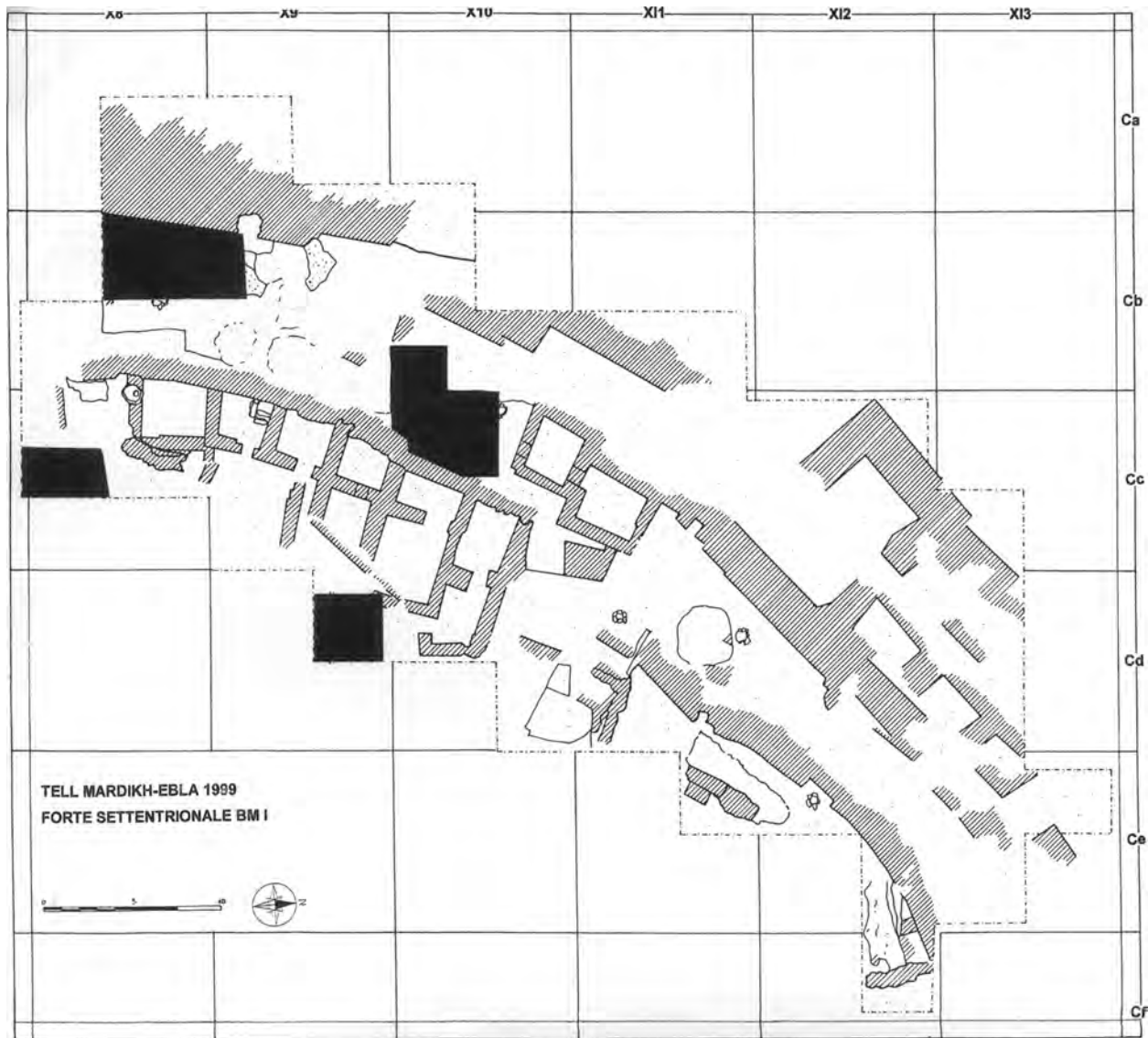


FIGURE 3. Tell Mardikh-Ebla, MB I Depositions.

which the deposition has funerary offerings, with a varying number of three to eight pots (amongst which are the medium sized jars with rope decorations, typical small BM I cups, globular small jars, small collared cups, Syrian Bottle, cooking pottery); in a second phase these burials were covered by another brick rectangular building.

The funerary objects of the first group are rather simple: a male or female figurine (D. 6979), one or maximum two tools (D. 6979), a pestle and a flint, a bronze stick. At first analysis the depositions that appear of children are also made by a dug-out grave in which can be found a big jar with rope decoration on the shoulder (of the typology of BM I, especially according to the extremely depurated and whitish fabric), together with a minimum of two to a maximum of 18 vases: typical small collared jars, small carenated cups also belonging to BM I, Syrian Bottles, and sometimes cooking pottery.

The funerary objects are richer and more varied: there are necklaces with different types of beads and pendants. The shapes include globular, pomegranade and biconical beads made of varying materials, e.g., cornelian, clay or fritte (D. 7361). The most interesting are those

of deposition D. 6997, made by two small hut-shaped beads and a pendant in the shape of a hollow closed tambourine, with three holes on the bottom and with small clay elements inside, that would rattle when you shook it. Another hole on the top side of the pendant was for the thread of the necklace.

Another deposition—D. 7361—has given rich, numerous and diversified funerary objects: two spiral bronze bracelets, a bronze pin and earring, four *faïence* beads, one in cornealian, one in crystal rock and one in serpentine with four shells with holes.

Belonging to a deposition only partially excavated, D. 7375, because cut by the foundations of a successive wall, is a beautiful piriform mace head. It doesn't appear possible to define a prevailing orientation of the depositions, at least two have the entrance to the jar, containing the body, to the western and north western, one has the entrance to the south and another to the south western.

The MB II phase (Fig. 4)

The initial phase of MB II is when the Fortress and the connected complex are built.

The technique is inter-filled: made by external walls of big stones which are filled by smaller ones mixed with soil; the elevation, found only in a few spots, was made of sun-dried bricks. More complex is the understanding of the internal distribution of space: as there are successive not completely removed overlaying structures, only four rooms can be seen clearly: L.6923 next to the south western corner, L. 6915 and L. 6930 to make the east side of the structure.

Notwithstanding the difficulties in understanding the individual rooms, we can suppose that inside the structure was formed by two rows of rectangular rooms of gradually diminishing size in the S-N direction, as in Fortress M and V. The rooms measure respectively 7.5 by 4.5 m (L. 6923), 3 by 2 m (L.6915) and 2.5 by 1.5 m (L.6930) forming the eastern row of dimensionally decreasing rooms. To these correspond similar ones on the western side, covered, as will be discovered later, by a large superimposition of MB II.

The entrance to the building, still not found, should be on the south side of the Fortress near room L 6923, the biggest found and the only one where we can suppose the presence of a stairwell, as observed in the other fortresses of Ebla. The L. 6950 floor made of limestone dust of grey colour, excavated along the east side of the Fortress, was found in big segments and in good conservation. It belongs to an open space in front of the structure, its function being an access to the entrance of the building.

In the last excavation campaign to the east of L. 6950 wall M 7369 was found. Its function is that of a terrace of the same defensive structure even though the wall has a NE-SW direction less evident compared to that of the fortress, directly on the rampart. In this way the open space in front of the Fortress is of irregular shape with a limit made to the south by wall M. 7369. The wall measures in length ca. 19 m, and the partially preserved height at one point reaches approximately 3.50 m.

The remaining part of the complex, built during MB II, extends to the south of the Fortress. A terraced wall, M. 6954–M. 7330, 27 m long, entirely built in stone and with a N-S direction, separates rooms L. 6960 and L. 6973. The rooms, measuring 3.5 by 3 m and 3 by 2.3 m respectively, both overlook to the south a paved space and an area in front of a well. The two rooms communicated through an opening in M. 6967, that after the rooms stopped being used, was closed off. As the findings were very scarce, we do not know their exact function, although they seem related to the nearby Fortress.

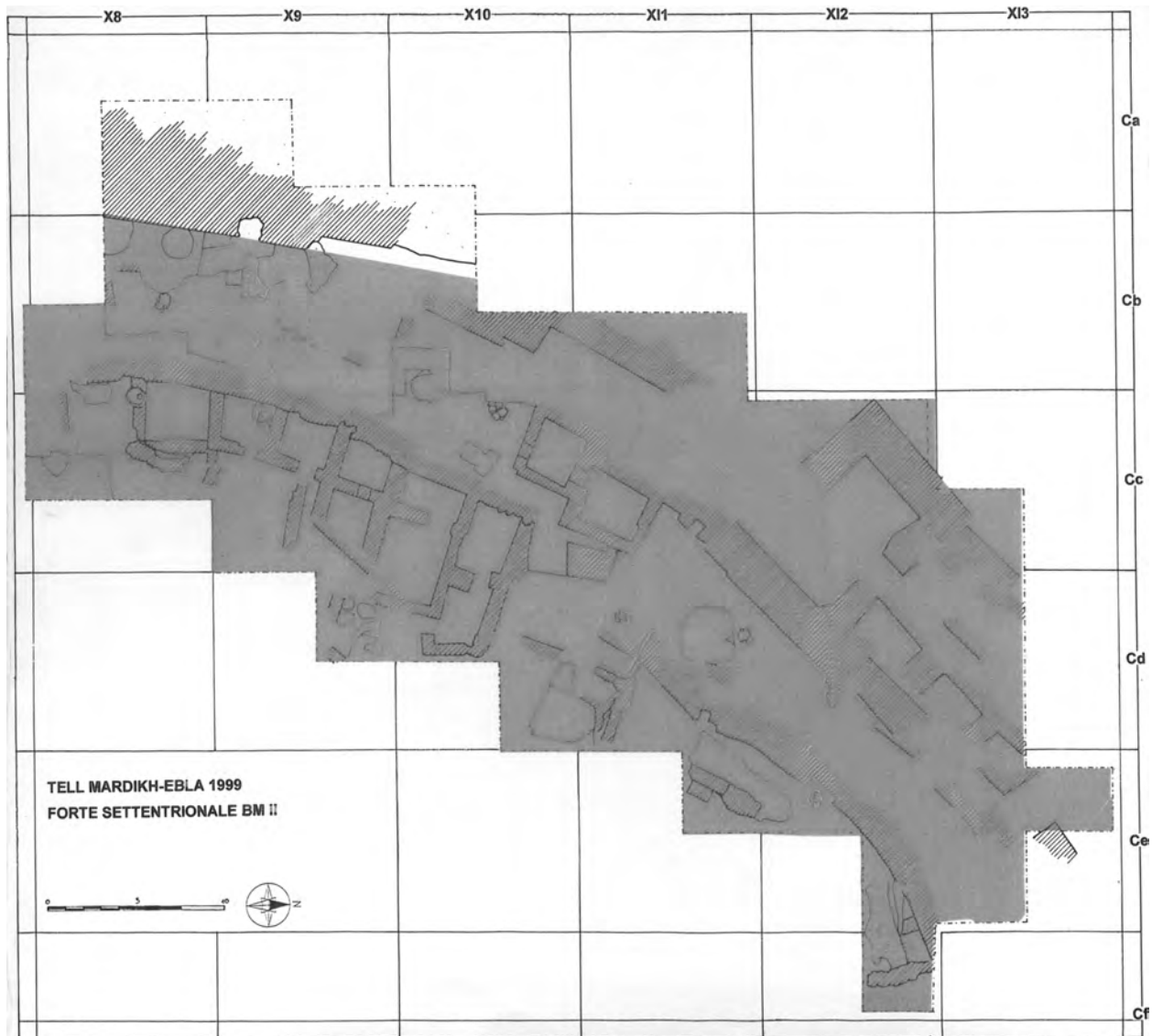


FIGURE 4. Tell Mardikh-Ebla, Northern Fort During MB I-II.

At a lower level and leaning against M. 6954–M. 7330, that forms the ending wall, another nine rooms⁴ were found. The northernmost are made of a double line of rooms that opens towards a probable open space to the east. The rooms to the south⁵ all overlook L.7376, probably an open court.

The internal distribution of this larger group of rooms is clearly readable: as previously noticed, the complex opens entirely to the east on an area that should have been closed. The rooms communicate only with this space or, in the case of paired rooms, only with the one in front; the only particularity is L.6966 that is open to L.7348. The reconstruction of the circulation between the two groups of rooms and the highest area found further back, is not easy; the only certain element is the presence of a stone staircase in the northwestern corner of L. 7359 that allowed to overcome the difference in levels between the two areas.

4. L.6955: 3.5x2.5 m; L.6975: 2.5x3 m; L.6969: 3.5x1.5 m; L.6966: 4.3x3.5 m; L.7332: 2.5x2.7 m; L.7348: 3.5x2.5 m
5. L.7333: 2.7x2.5 m; L.7359; 2.7x2.5 m; L.7351: 3.5x3 m.



FIGURE 5. Northern Fort Southern Sector, General View.

The only limit of the entire complex recognized so far seems to be the wall to the west, M. 6958 with NE-SW direction, ca. 14 m long and ca. 3 m wide, characterized by the presence of an indentation. The wall was found only in part, probably connected with the south perimetric wall of the Fortress.

The final MB II

In a moment before the destruction at the end of BM II, caused by the attack of the Hittite army, this complex underwent a series of changes of which we can follow the works on the ground without knowing the causes which provoked them. The most important event was no doubt the closing of the group of rooms to the south of the Fortress. All of them have pressed soil closings that sometimes is mixed to ground limestone parts.

Interesting is the evidence given by two of these rooms L. 7332 and L. 7333: here only the western sector has a big filling made of alternate lines of red soil and limestone, whilst the western side, next to M. 6954–M. 7331, shows an evidently sun-dried brick destruction level almost complete or in large pieces. The fillings that make the closing of the rooms have a southwestern orientation.

All this evidence leads us to believe that, at least in relation to these two rooms, the closing of the space was consequent upon the partial collapse of their walls. The closed rooms were subsequently covered by a level of sun-dried bricks; the preservation is quite fragmentary due to erosion and to the stratigraphic position, next to surface level.



FIGURE 6. Northern Fort, the closoing during late MB II.

The same type of intervention can be seen inside the Fortress that, in this last phase of use, was covered with a layer of bricks. This operation, that also involves all of the area in front of the fortress, shows a rebuilding of all the complex which seems to change from the original military function to a new still not clear one. What is certain is the abandonment of the rooms that in the precedent phase were used by the garrison here posted, maybe due to a general demographic crisis.

Internal comparisons

The south-eastern Fortress:

The M Fortress is on the internal southeastern part of the walls of Ebla and shows planning system all in all similar to that of the AA area: it is characterized by three sets of rooms of decreasing size starting from the entrance room.⁶ These rooms do not communicate with one another, neither with the entrance room that has a wall staircase to reach both the roof and the inside rooms by the use of wooden steps. The entrance is positioned on the SW side. The building has a length of 27 by 12.5 m and the thickness of the perimetric walls varies between 2.5 and 3 m. In the rooms inside were found spearheads and a piriform mace.

Western Fort (V area): Differently to the M Fortress, it isn't an isolated building but is part of a more articulated complex formed by a group of rooms distributed around a wide

6. 5x2.5m, 3x2.5m, 2.70x2.5m.



FIGURE 7. OB Tablet found in L.7348 MB II.



FIGURE 8. Spearhead found in L.7348 MB II.

central court. It reaches a length of 26 m, while the preserved width is of 10 m. The internal organization of the building appears similar but not identical to that of Fortress M: the rooms are square and of similar measurements (ca. 3 by 4.20m). The entrance communicates with the first of the double series of rooms and the entrance is on the southeastern side. The thickness of the perimetric walls is ca. 2.5–3 m. The fitting in of the Fortress to a bigger complex determines a more articulate functionality of the entire building as can be noticed by the findings: at least ten cylindrical seals, bullae, bullets, bone furniture, bronze weaponry.

Outside comparisons

We have to state first that other buildings comparable to our structure and to the organization of the Northern Fort do not exist. We do have some buildings that are comparable to those of Ebla functionally and topographically.

Gezer: For typology the closest comparison is Tower 5017, a fortified structure of ca. 26 by 15.5 m on the southern side of the inside perimetrical wall of the South gate. Architecturally it is formed by a staircase and two pairs of inside rooms that measure 6 by 2.5 m. The comparable elements are interesting not only in relation to the internal organization of the building—the presence of a staircase and of sets of rooms— but also for the proximity of this Fortress to the Southern gate of the town. This topographical position re-proposes what can



FIGURE 9. D. 7361 MB I.

be observed in Fortress AA situated in the immediate proximity of the northwestern gate of the town.

Megiddo: Connected to Layer XII of this site in the eastern part of the town walls a defensive structure has been brought to light of ca. 10 by 5 m in size, characterised by the presence of two rooms (3.5 by 2 m; 2 by 1 m) along the length-wise axis. The findings of this level allow to bring forward the theory that also in Layer XII there was a town gate next to the building.

Tell el-Far‘ah (North): In the southern sector of the fortification a bastion of ca. 12.5 by 7 m was built, tripartite with the entrance vestibule (3.50 by 1.80 m) on the Northern side. The perimetrical walls are ca. 80 cm thick.

Tell Zeror: In the western area of the town walls a fortress of 15.5 by 7 m has been brought to light. The internal space is simply divided by a secondary wall into two rooms of different size (3.20 by 3.20 m, 7.5 by 3 m).

Conclusions, problems and outlooks

The M Fortress, on the western side of the town walls, is built on an internal slant of the fill and has a reduced visibility of the outside space of the town. The Western Fortress is on the top of the fill half projected outside the Tell; still different is the position of the Western Fort that, although built on the highest point of the fortification, goes down towards the inside with degrading terraces.

Based on the limited known data we assume that the eastern front of the town walls of Ebla was, for some reason, less fortified than the western one. This fact could be motivated



FIGURE 10. Pottery from MB I depositions.

with a less problematic political situation to the west tied to the political rise of the Yamkad Reign.

Chronological aspects

The M Fortress, planned and built in only one phase, has a unitary chronological phase which dates to BM II. Differently the northern and eastern Fortresses are the result of various successive phases, that changed the original plans: in the Eastern Fort an enlargement on the southern side of the complex; in the northern one a total reorganization with the closing of almost all the rooms including those of the Fortress.

Historical aspects

The building of the northern and eastern Forts, homogeneously dated to BM II, leave some unanswered questions: the building of the western and northern Fort in the phase of the political hegemony of the Reign of Yamkhad still has to be explained.

Other doubts lie in the different situations present in the Forts. The western one seems to have been used right up to the final BM II destruction, while the Northern Fort saw a radical change of function certainly before this event: the destruction was not in the rooms filling but there were clear traces of it during the last phase of use.

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L'acropole de Tell Mardikh a l'époque perse achéménide

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Résumé

Les fouilles de l'acropole du site de la Ebla du III–II^{ème} millénaire av. n.è. commencées à partir des années soixante et non encore terminées, ont porté au dégagement partiel de la surface de la colline entamant les couches des époques les plus récentes: les vestiges d'un village de dimensions moyennes mis au jour lors des 1^{ères} campagnes et datées à la phase perse-hellénistique peuvent déshormais être reliées topographiquement au bâtiment dit le “Palazzetto persiano”.

Les données présentées (préliminairement) ont eu comme point de départ la reprise du dossier de la phase tardive de Tell Mardikh pendant la période VI de sa chronologie interne¹ correspondant à la phase Perse de Mardikh VIA (535–325) et à la phase Hellénistique de Mardikh VIB (325–100).

L'aire concernée est la citadelle du site qui est caractérisée par sa forme presque circulaire: ² les nouvelles des découvertes de nombreuses années d'activités sont inédites et représentent aussi le résultat de l'étude du dossier disponible,³ tandis que pour les années récentes il s'agit de données recueillies personnellement⁴ sur le chantier G auxquelles on a ajouté une analyse préliminaire du chantier CC dont la fouille a commencé il y a deux ans.⁵

Secteurs des fouilles

Le versant nord/nord-est de l'acropole (nommé *Area E*) nous a restitué les restes les plus considérables de cette phase avec un bâtiment indiscutablement de type palatial et un sect-

1. Les correspondances chronologiques entre la terminologie des phases internes du site et la périodisation générale de l'histoire de la Syrie sont exprimées dans Matthiae 1984: Tav. 94; Matthiae 1989: 51–58, Fig. 9.
2. L'aspect actuel du site semble avoir été déterminé avec le temps par la longue succession des niveaux archéologiques et causé par la présence, dans la région centrale d'Ebla, d'un affleurement calcaire qui a aussi déterminé l'origine même de son nom sémitique.
3. Vieux cahiers de fouilles et dessins techniques au crayon en échelle 1: 20.
4. Le chantier de l'acropole dirigé par S. Mazzone est par convention désigné par le sigle G: dans les années récentes on a coordonné les fouilles de différentes équipes de façon de pouvoir atteindre les niveaux du Bronze Ancien en laissant à la vue les couches de l'époque tardive (en fouillant en *open area*).
5. Ce nouveau chantier sur les pentes sud-orientales de la basse colline nous a permis sans beaucoup d'effort d'avoir des résultats sur les phases archaïques de la ville.

eur complexe composé par les habitations du village articulées de façon apparemment spontanée.⁶

Le versant occidental de l'acropole par contre a fait l'objet de multiples sondages regroupés sous le nom du même secteur *Area G*:⁷ il comprend une zone plus exactement occidentale, une partie méridionale et enfin une partie septentrionale qui est toujours en activité; en general nous a donné de multiples ensembles d'une occupation clairsemée.⁸

On abordera aussi la question d'un nouveau secteur d'énquêtes (nommé *Area CC*) situé au sud-est de l'acropole en le reliant aux nouvelles stratégies de fouilles sur la citadelle afin d'atteindre les niveaux du Bronze Moyen et du Bronze Ancien bien plus profonds que ceux de l'époque perse.

Phases de la recherche sur l'acropole de Tell Mardikh:

En suivant un critère d'ordre chronologique les fouilles qui nous concernent ont commencé à partir des années 1965–1968, pendant lesquelles ce sont les vestiges du village situé dans la région nord-est de la citadelle qui on retenu notre attention.

Le départ des travaux dans l'*Area E*.

Les prospections de surface faites en 1964 et les premiers résultats du chantier D sur la citadelle nous ont permis d'envisager la chronologie des phases tardives de l'occupation du site.⁹

Pour déterminer l'emplacement exact et surtout l'extension de l'établissement tardif, sur les bases des affleurements de céramiques en surface, un sondage a été ouvert ultérieurement dans le secteur E de la petite colline, là où la superficie septentrionale du plateau présentait une dépression.

La fouille de 1965 a localisé les restes des habitations de l'époque perse et toutefois a aussi révélé des remaniements superficiels d'un établissement plus récent mais qui, en raison de l'absence dans ce secteur de céramiques postérieures au II siècle av.n.è., n'était pas postérieur à ce siècle.¹⁰

En 1966 l'élargissement de l'aire fouillée en direction de l'ouest a donné comme résultat la découverte de deux îlots séparés par une ruelle étroite de un mètre et demi de largeur faite de terre battue et de cailloutis.¹¹ Dans cette région de la colline les structures des murs pratiquement affleuraient à la surface du Tell: au-dedans de l'aire fouillée on a remarqué au moins deux phases de constructions superposées, chronologiquement très proches.

En 1967 le chantier E fut amplement élargi, récupérant une large zone entre la partie occidentale déjà connue juste à côté du point le plus élevé de l'acropole et la partie de l'étab-

6. Pour les données relatives au *Palazzetto rustico* ont renvoyé à Mazzoni 1984 et Mazzoni 1991.

7. L'exploration de ce côté a eu au départ comme but (pas encore complètement abandonné) la recherche du Palais de l'Ébla des archives du BAIVA.

8. Ou bien cela était l'impression en partant d'une méthode de fouille qui a apporté à la vue progressivement les couches inférieures, les connaissances de la phase tardive étant donné par des dessins techniques jamais montés ensemble jusqu'au présent.

9. Déjà à partir de la première année les superpositions archéologiques de l'aire du Temple D de l'acropole d'Ébla ont fourni des éléments pour des considérations initiales concernant l'histoire tardive du site; Floriani Squarciapino 1965: 54–55.

10. Fronzaroli and Matthiae 1966: Plan 6.

11. Fronzaroli 1967: Plan 9.

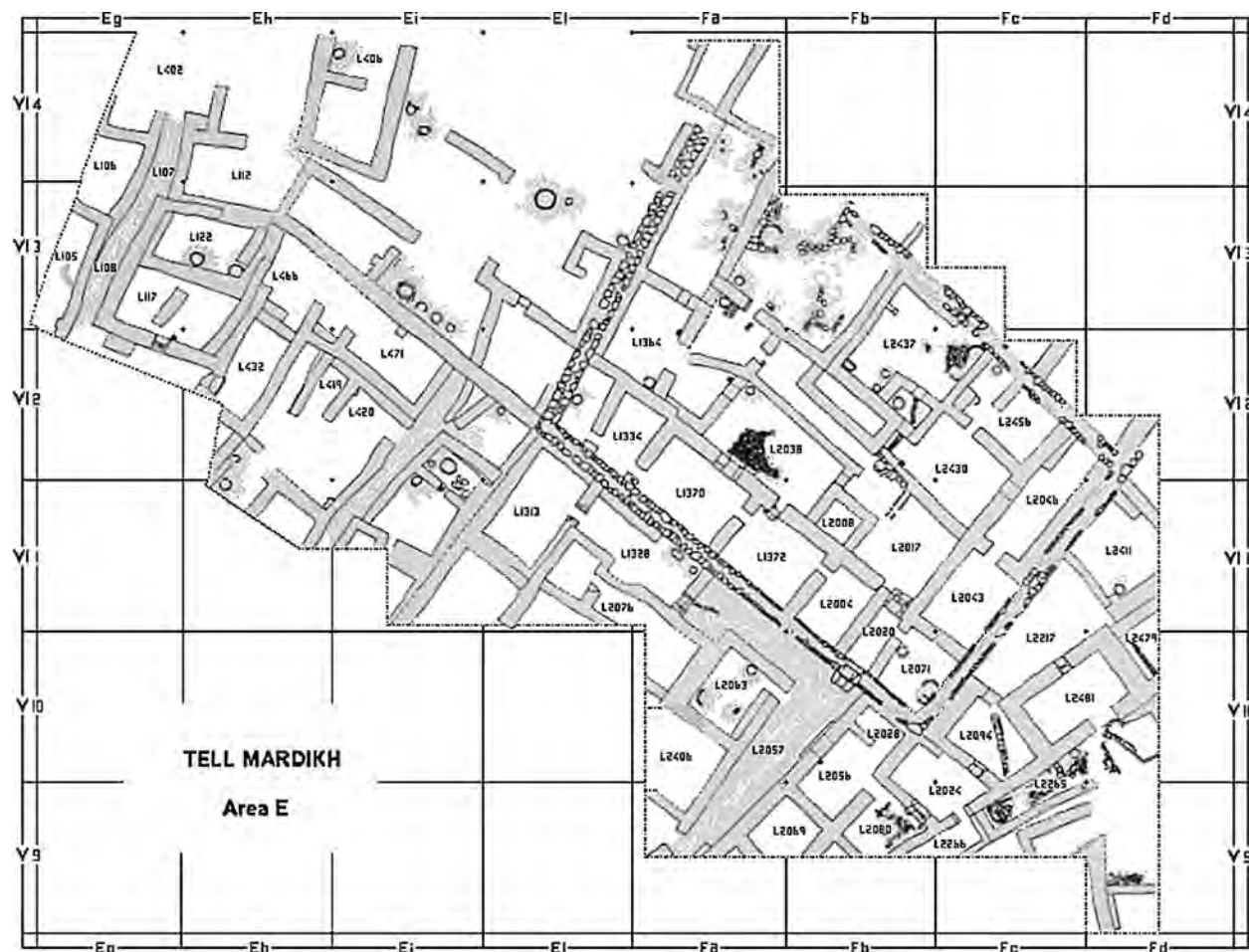


FIGURE 1. Secteur E, fouilles 1965–1974.

lissement située à l'est de la dite ruelle.¹² Pendant les années suivantes c'est dans ce secteur ouest de la fouille qu'on décida d'atteindre les niveaux plus profonds du Bronze Moyen ce qui a porté à la découverte du Palais Résidentiel Royal E de l'acropole éblaïte.

Phase des années 1968–1985: chantiers E et G.

Une phase nouvelle des enquêtes a été ouverte en 1968 avec le début des fouilles sur le bâtiment de l'époque perse dit "Palazzetto persiano", et la suite du même chantier vers l'est en suivant le long mur périmétral du même édifice (Fig. 1) bati avec une technique caractéristique avec des parements en gros blocs équarris et un remplissage de pierres de petit format à l'intérieur. Jusqu'en 1971 les fouilles ont été effectuées en complétant la mise au jour du palazzetto en éliminant partiellement les bermes.¹³

Cette phase de travaux se caractérise par une synthèse des connaissances concernant l'établissement de la phase tardive de Mardikh et correspond aussi à l'ouverture sur le côté

12. Les données de la fouille n'ont jamais été publiées et apportaient de nouveaux les restes du village réperés dans l'aire nord-ouest sous le côté le plus élevé de l'acropole avec le traces d'une ruelle orientale, des constructions probablement aile occidentale du *Palazzetto* et une région de l'habitat rustique.
13. Les bermes par contre dans les chantiers du site restent d'habitude pas fouillés.

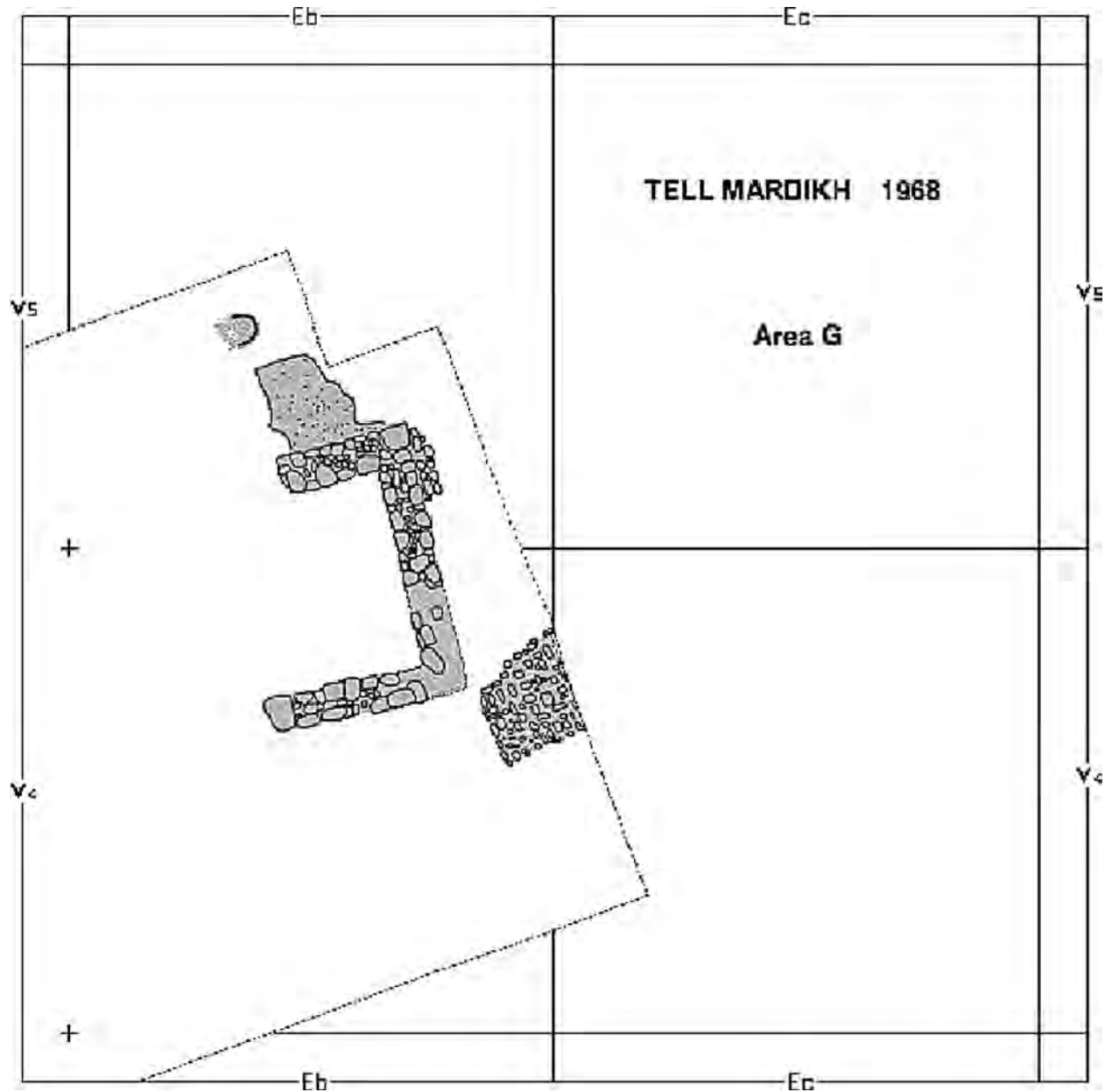


FIGURE 2. Secteur G, fouille 1968.

occidental de l'acropole d'un nouveau chantier appelé G sur la pente ouest du côté central de la citadelle où on a également retrouvé le niveau du village de la même phase (Fig. 2). Une tranchée de 13 mètres x 8 orientée à 45° fut ouverte pour trouver l'accès à l'acropole de l'époque du BM, celle-ci étant entourée par un terrain en forte pente. Dans la moitié orientale de cette tranchée furent retrouvés les restes architectoniques des structures de l'établissement perse avec des niveaux de sols au nord et un foyer.

À l'est par contre a été mis au jour un dallage identifié comme une cour ouverte. Une longue exposition à l'air libre de ce niveau est démontrée par la découverte d'une pièce islamique.¹⁴ En 1969 sur le chantier G l'aire de la tranchée fouillée en open-area en direction

14. L'affleurement en surface de vestiges datées des époques les plus variées a été maintes fois documentés sur les cahiers de fouilles.

de l'est a été élargie en utilisant une méthode de fouille par carrés sur une surface de 150 mètres carrés environ desquels malheureusement n'existe à ma connaissance aucune documentation planimétrique¹⁵ mais desquels on connaît les résultats grâce au cahier de chantier qui mentionne la présence d'un niveau homogène d'occupation de la phase perse-hellénistique.¹⁶

Le chantier de l'Area G Sud: 1982–1983.

Dans la première moitié des années '80/quatrevingt pendant la nouvelle phase des fouilles de l'acropole on abandonna complètement le vieux chantier E tandis qu'on commençait les activités du chantier G à l'extrémité méridionale de la citadelle: à cet endroit correspondent des restes très lacunaires de l'établissement tardif (Fig. 3).

Les fouilles de 1982¹⁷ et de 1983¹⁸ ont porté à la découverte de restes très superficiels d'une ample portion d'un pavement en terre battue sur lequel reposaient des structures en pierres: on signale la présence sous-jacente d'un niveau de décharge de la même phase.¹⁹

Nouvelle phase des enquêtes sur l'acropole: chantiers G et CC.

Déjà à partir des premières années quatrevingt les fouilles du chantier G sur l'acropole visaient à documenter les phases plus anciennes du troisième millénaire dans la partie septentrionale du Complexe Central du Palais des archives de la Ébla du Bronze Ancien IVA.²⁰ La lente progression des données procurées annuellement par la fouille nous a donné avec le montage des plans détaillés (Fig. 4) l'impression d'une occupation de ce secteur aussi dense que dans le secteur E (Fig. 1).

À l'intérieur de la même phase perse-hellénistique on peut nettement distinguer un niveau prolongé d'occupation avec les restes architectoniques de l'établissement et un niveau inférieur caractérisé par une grande décharge: dans cette partie de l'acropole on a documenté pour le village trois niveaux d'occupation différents superposés dans l'arc du V–IV siècle.

La fouille d'une énorme décharge datée de l'époque perse et nommée F. 5107 a occupé pour des années les opérations du chantier G (Fig. 4) vue son extension sur une surface d'un peu plus d'une dizaine de mètre de rayon: ²¹ dans son remblai on a différencié six sous-phases correspondant à autant de jétées de comblement.²²

Les structures des habitations de la même époque perse étaient construites directement sur ce remblai meuble formé par un dépôt de cendres de végétaux brûlés ou décomposés, mêlés avec des os, de la céramique et une ample variété d'objets. Une telle opération de

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15. Cette absence nous a interdit de rendre le plan de la zone concernée.

16. Dans les archives de la Mission il n'existe au présent aucun relevé ou dessin au crayon de l'aire fouillée par S. Zaccagnini entre un espace de six carrés de cinq m de côté (dont une aire fouillée globale de 150 m² environ, sans calculer l'aire des bermes pas fouillées internes au périmètre), à l'exception de son cahier de chantier.

17. En 1982 les opérations de fouille étant menées par S. Mazzoni.

18. En 1983 les opérations de fouille étant menées par F. Baffi.

19. Il faut souligner que l'extension présumable de cette décharge dépasse le plan exposé.

20. Le BA IVA de la chronologie proposée par P. Matthiae pour le troisième millénaire de la Syrie septentrionale interne est correspondant à la Ébla du Palais des archives.

21. Le niveau du sol L.7493 à l'est dans le plan de la figure 4 correspond au niveau de glissement de la grande décharge en la délimitant nettement au nord-est, tandis que les sols L. 7457, L. 7491, L. 5104 et L. 4706 couvrent la fosse en lui étant superposés et successifs.

22. La datation de la céramique qu'a été retrouvées ici-dedans rentre dans le même horizon chronologique perse, ne permettant pas de remonter beaucoup au-delà du V siècle Av.N.È.

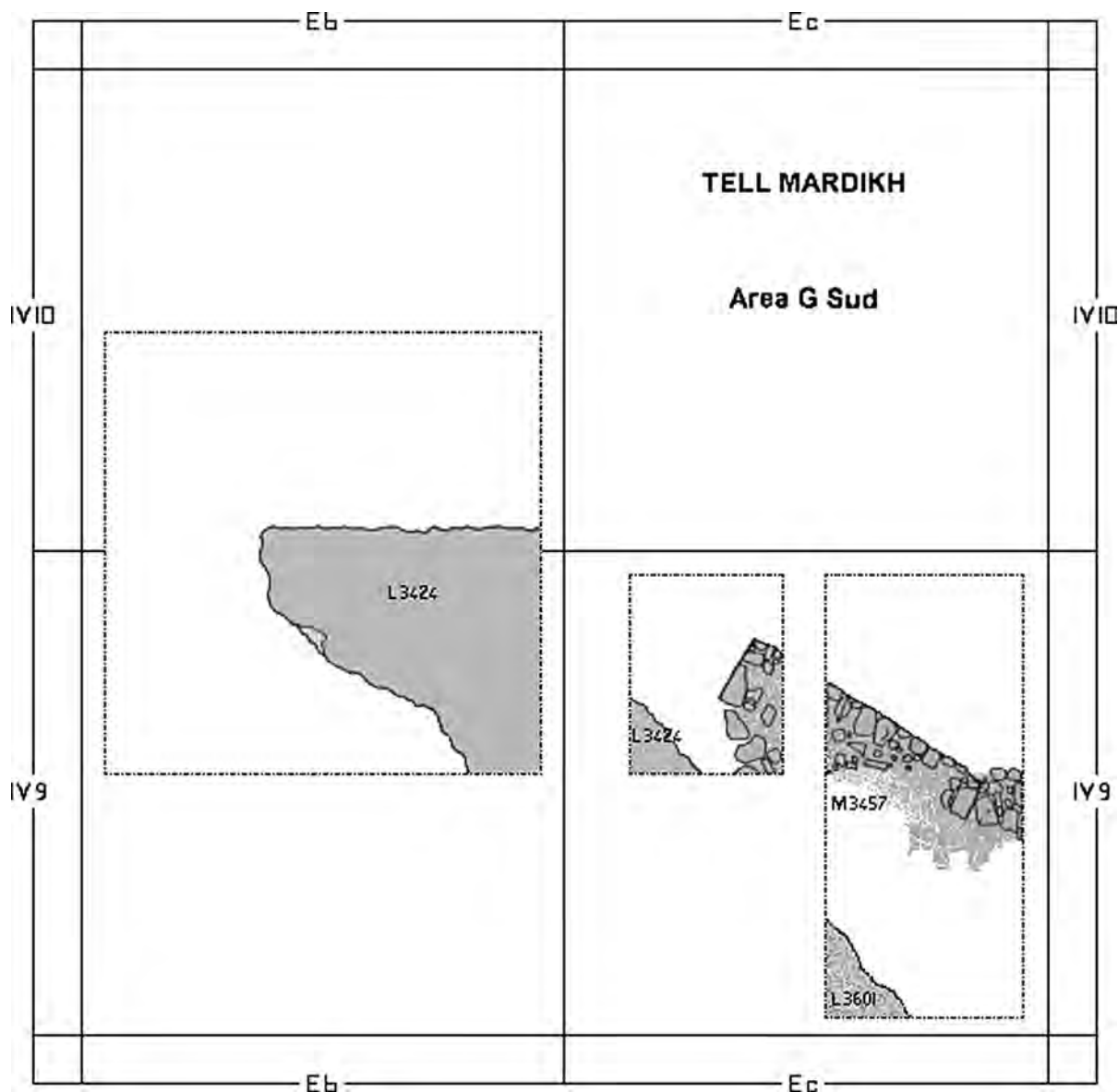


FIGURE 3. Secteur G, fouilles 1982–1983.

comblement surement a été faite pour niveler une dépression au-dessus d'une fosse préexistante datée du Fer II (environ IX–VIII siècle) qui avait été creusée tant pour récupérer des blocs que pour précipiter dedans des blocs de récupération afin de les briser. Cette régularisation du niveau faite pour installer des habitations, a été suivie par d'importants travaux de fondation effectués pour stabiliser celles-ci.

Avec le départ du chantier CC en 1998 on a vu une attention renouvelée de la part de la Mission à Ébla envers les phases les plus anciennes de l'histoire du site et en même temps le retour des activités sur l'acropole: toujours dans le but d'atteindre les niveaux profonds les opérations ont aussi intéressé les niveaux les plus superficiels de l'époque perse-hellénistique (Fig. 5). Dans un futur proche²³ la reprise des activités dans le secteur

23. Les différents buts des enquêtes ont porté à la multiplication de chantiers et d'acteurs sur le site.

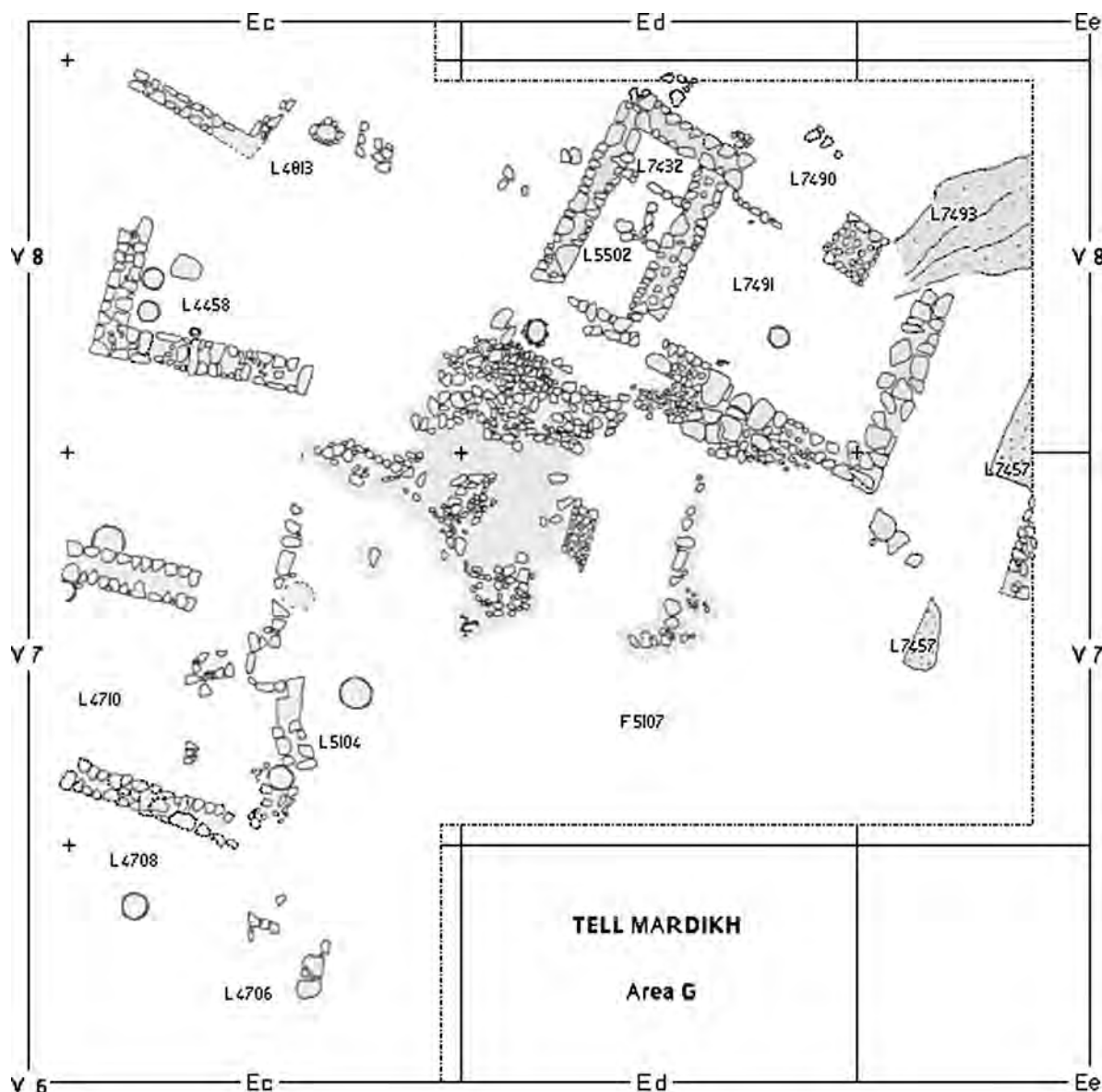


FIGURE 4. Secteur G, fouilles 1988–1998.

E devrait permettre d'atteindre les niveaux inférieurs où reposent les structures du Palais Résidentiel du Bronze Moyen.²⁴

Présentation préliminaire des données:

Les données sur l'occupation de l'acropole de tell Mardikh jusqu'au présent se limitaient globalement aux structures du petit palais²⁵ tandis que maintenant on peut disposer du plan du village tout autour (Fig. 1): ces résultats documentent un plan organique tout à fait

24. Le projet de l'atteinte des niveaux profonds dans cette région de l'acropole a été souvent déclaré dans le temps par P. Matthiae.

25. La partie occidentale du secteur E avait été présentée dans les rapports préliminaires des années soixante.

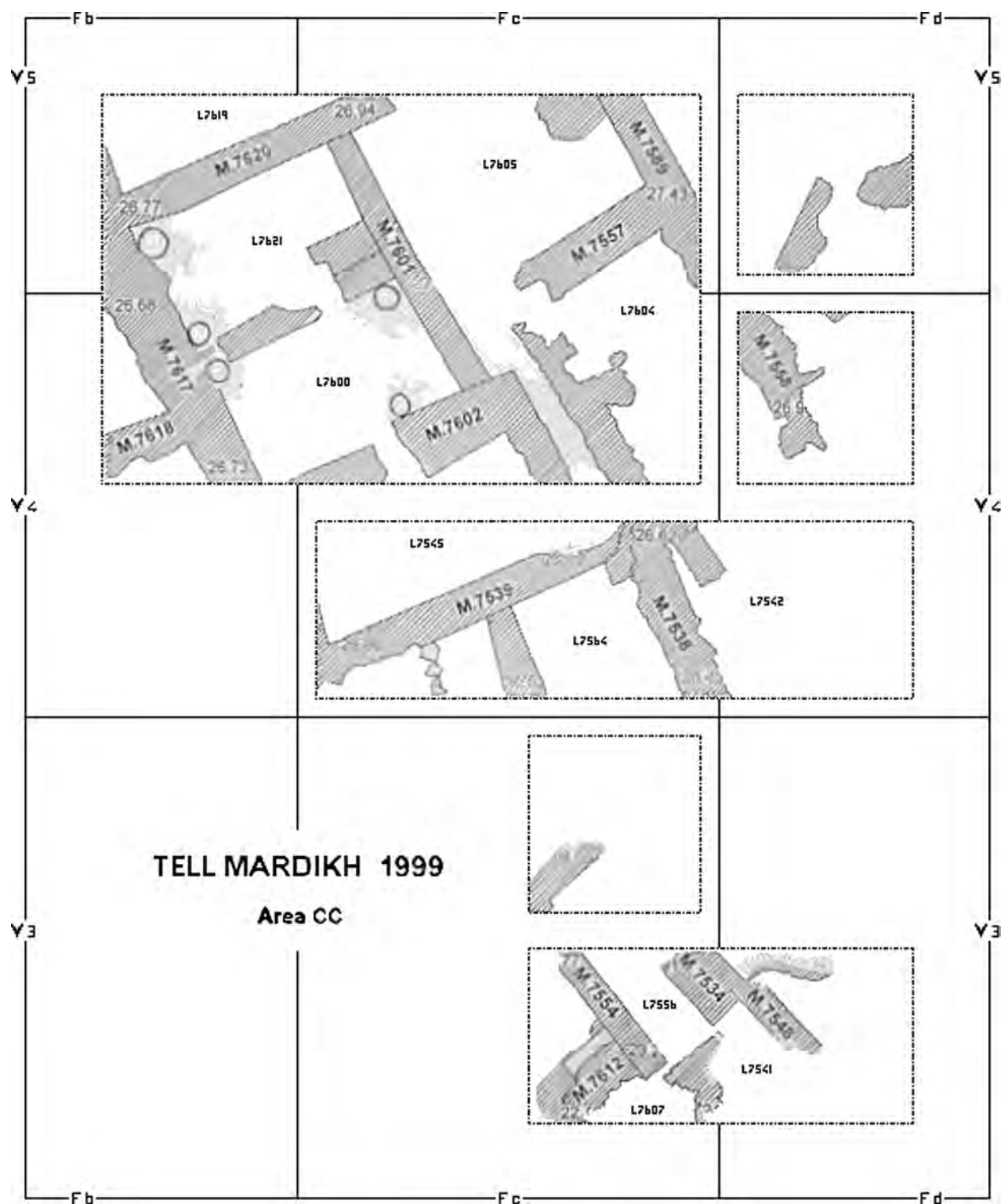


FIGURE 5. Secteur CC, fouille 1999.

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ion dense”

chaotique comme on pouvait imaginer hypothétiquement même si les habitations se regroupent densément aux alentours de la structure centrale prééminente.

Une réflexion sur la structure du site et sur le type d'agglomération nous offre la possibilité d'entrevoir une recherche de planification régulière et organique dans le dessin des

axes routiers (seulement dans le secteur E on en voit clairement trois avec des fonctions variées) et aussi une orientation cohérente des structures des maisons. Il faut spécifier qu'un tel schéma d'orientation selon un axe biais par rapport au nord géographique est complètement nouveau à Mardikh et marque une rupture avec l'âge du Fer.²⁶

Dans le secteur G aussi, les données récentes concordent sur une présence des structures seulement en apparence clairsémée (Fig. 4): les données de la fouille du 1968 et 1969 confirment cette hypothèse (Fig. 2) et l'on relève une parfaite homogénéité des édifices domestiques jusqu'à l'extrémité méridionale de la citadelle (Fig. 3).²⁷

La partie la plus septentrionale du secteur G présente par rapport à la région E une concordance aussi dans l'orientation des structures et des axes routiers qui remontent sensiblement du sud au nord.²⁸

Plus particulièrement les implantations dans cette région nord-ouest correspondent à un effort de planification obtenue par la régularisation du niveau d'occupation qui dans le cas du secteur G comporta aussi la création inhabituelle des profondes fondations nécessaires pour stabiliser les murs.

Le plan de la phase perse-hellénistique est caractérisé dans le secteur CC aussi par une agglomération dense de type domestique et une présence constante d'installations artisanales typiques de la période (Fig. 5). La structure principale dans la partie septentrionale de l'aire fouillée semble être modulée selon un schéma d'aggrégation semblable à celui des habitations installées en face du Palazzetto E: le mauvais état de conservation de ce secteur malheureusement nuit à sa bonne compréhension.

Analyse préliminaire de la phase

Sur le site de Tell Mardikh la forte érosion subie par la surface de l'acropole au cours des siècles a remis au jour les niveaux tardifs²⁹ et toute hypothèse sur la densité de l'habitat doit tenir compte de cette réalité.

En ce qui concerne les restes architectoniques un niveau bien distinct de phase hellénistique avancée datable aux III–II siècles a été réperé juste au-dessus de la phase perse seulement dans le secteur E pratiquement déjà affleurant dans la partie centrale et nord-est, mais évidemment avait été le premier à disparaître à cause de l'érosion.

Un tel niveau postérieur à l'époque perse apparaît donc exister seulement par endroit au nord et au nord-est, tandis que la stratigraphie présente de faibles traces vers l'ouest; aussi en calculant une perte partielle de ce niveau à cause de l'érosion, le site du village de toute façon avec le temps doit avoir subi une réduction drastique.

Les vestiges de la phase du village mises au jour sont caractérisées par des aménagements liés à la conservation des produits de première nécessité (céréales, ovins) et à leur transformation (filage, tissage). C'est dans ce sens que l'on interprète les multiples attestations d'installation de foyers associés à des banquettes et des plans de travail normalement

26. Comme on déduit de l'orientation des restes architectoniques des plans dans Mazzoni 1992: 99–102, 104–106, Figs. 4–8.

27. Les données du cahier de fouille de l'acropole de l'année 1969 concordent avec cette interprétation.

28. Dans le plan de fig. 4 les restes d'une petite ruelle montante vers le nord a été signalée comme L. 7457.

29. Comme le démontre le cas de la pièce islamique retrouvée sur le dallage d'époque perse-hellénistique du plan de la figure 2.

disposés contre les murs périmétraux et de façon homogène attestés un peu dans tous les secteurs.

Les maisons présentent normalement des niveaux de sols faits en terre battue de couleur orangeâtre avec une main d'enduit blanchâtre gypseux au-dessus. Les blocs de calcaire bien équarris amplement à disposition sur le Tell ont été diffusément réutilisés dans la construction des murs ou bien utilisés comme seuil des portes en récupérant des dalles plates ou enfin en utilisant comme crapaudines les anciens mortiers basaltiques en forme de coupe.

Les murs ne présentent pas généralement de fondations profondes mais sont formées par un soubassement en pierre laissé à vue qui supportait une élévation en briques: il n'est pas rare que les murs des maisons apparaissent bien faits avec un véritable parement extérieur, constitué de blocs de dimensions moyennes et de pierres bien ajustées à l'intérieur.

L'étude du mobilier de cette phase tardive à Tell Mardikh, bien qu'il a été déjà entrepris reste encore en phase préliminaire, vue son état multiforme et la dispersion des données: la céramique seule a déjà fait partie d'une analyse spécifique de la part de S. Mazzoni.³⁰ Dans une définition de cette dernière l'industrie céramique de cette phase présente des caractères spécifiques dans un horizon local autonome.

Les éléments de continuité avec la tradition de l'âge du Fer sont encore présents mais ils semblent se limiter à la présence sporadique de grandes jarres de conservation avec lèvre épaisse rentrante de profil triangulaire et à celle de jarres de dimension moyenne à lèvres doubles et pâte jaunâtre typiques déjà du Fer III. Un élément réellement innovateur de la culture matérielle de profonde signification est constitué par les (localement) nouveaux types de pâtes: des types fins présentant des pâtes claires dépurés et poreuses, dans la majorité des cas de couleur verte ou rosée avec engobes d'une couleur tendre, vert pâle, attestés dans les formes d'assiettes, coupes, cruches et jarres à nervures parfois à décor appliqué.

Fossiles-modèles de cette période sont devenues désormais les *cuvettes* ou *mortaria*, aussi identifiées comme des unités de mesure à des fins commerciales ou des *plats à gruau* pour familles nucléaires.

Au même horizon céramique appartiennent les amphores du type *torpedo* aux petites lèvres arrondies dont les origines remontent aux différents types de jarres côtières de l'âge du Fer: à ce propos on signale la découverte d'un lot de vases dans un contexte de l'aire E avec une jarre *torpedo* associée à des lécythes peints typiques d'une époque avancée de cette phase.

L'ouverture vers les marchés occidentaux apparaît comme le premier des principaux facteurs d'innovation, visibles dans l'augmentation progressive des importations grecques qui pénètrent profondément dans les régions internes du plateau syrien.

Parmi les matériaux caractéristiques les figurines de terre cuite apparaissent toujours dans les terrains du niveau de la phase perse-hellénistique du site: on les trouve généralement de façon fragmentaire et elles correspondent à une typologie assez standardisée; d'autre part comme la céramique elles révèlent une tendance à l'hellénisation des types traditionnels.

Les types plus attestés sont les plaques avec la figure d'Astarté et les figurines du *chevalier perse*: dans le cas des figurines féminines de Ishtar/Astarté sont attestés des types variés tel que celle *dedalique* ou celle *hathorique* qui portent une fleur ou un disque ou sont toute nue, les mains sur les seins, elles ont leur origine dans l'imaginaire cultuel local de tra-

30. Mazzoni 1984 et Mazzoni 1991.

dition bien consolidé et présentent seulement un nouveau maquillage d'inspiration perse en montrant des affinités avec les modèles occidentaux.

Bien que les fouilles aient délivrés nombreuses attestations des objets les plus variés (on signale seulement les objets en os, faïences, verre, une grande quantité de pesons de tissérands en argile, fibules et métaux) on renvoie aux prochaines contributions des différents études³¹ moins partielles de cette communication où on a limité les données aux seules planimétries des habitations de Tell Mardikh³² en lui restituant une dimension et une image d'un petit village de l'époque perse-hellénistique plus organique qu'auparavant.

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31. Le résultat de l'étude en cours sur les restes de faunes retrouvés dans les fouilles du chantier G est encore dans un stade préliminaire, mais les analyses faites par la paléozoologue Claudia Minniti documentent une prévalence des caprovins en raison de 88 pour-cent de l'échantillon considéré: les calculs sur la mortalité obtenus sur la base de l'état des dents semblent indiquer une nette majorité d'individus adultes et permettent d'hypotiser un élevage finalisé non à la production du lait mais plutôt à la production de viande à consommer et de laine à filer.

32. Dans l'attente des résultats de tous les études en cours (les analyses paléobotanique et paléozoologique et l'étude du mobilier pour céramique et objets).

The Prehistoric Settlement Patterns of the Rouj Basin

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Abstract

The Rouj Basin is a small rift valley (30 km x 2–8 km) surrounded by limestone mountains, continuing northeast from the Gab Valley of the Orontes. We conducted archaeological research in this basin from 1990 to 1992, and we have concentrated our activities on one large Neolithic settlement since 1997.

Thirty-three tells were discovered within this rather small basin. The definite occupancy of the basin started from the late PPNB, and the number of settlements increased rapidly through to the Pottery Neolithic. A hierarchical settlement system can be supposed during this period. The excavations on the central settlement, Tell el-Kerkh, revealed that complex social organization and material administration were at work there. The number and the size of settlements in the basin decreased in the following 5th millennium B.C., and very little evidence can be recognized for the 4th millennium. Therefore, the settlement organization must have changed into rather simple dispersed patterns in 5th and 4th millennia B.C.

The Rouj Basin was repopulated densely again in the 3rd millennium B.C., especially the EB IV. This period was characterized by medium-sized settlements (3–7 ha), standing in a line along the eastern fringe of the basin. This settlement pattern suggests that the basin was incorporated into a large political sphere.

The Rouj Basin is a small rift valley (ca. 30 km x 2–8 km), continuing northeast from the Ghab Valley along the Orontes (Fig. 1). The basalt lava of the southernmost basin had separated the Rouj Basin from the Ghab Valley. The University of Tsukuba conducted archaeological research in this basin from 1990 to 1992, concentrated our activities on the largest tell complex, named Tell el-Kerkh, since 1997 with the Directorate-General of Antiquities and Museums of Syrian Government. Our first research (1990–1992) consisted of intensive general surveys with a few soundings and natural environment studies, and we succeeded in grasping the alteration of settlement patterns through different periods (Iwasaki et al. 1995, Iwasaki and Tsuneki 1999). This article presents the results of our research in the Rouj Basin and discusses the transformation of settlement patterns through the Neolithic to the Early Bronze Age for further understanding of the history along the Orontes.

The chronology and the tells in the Rouj Basin

For the execution of a proper general survey, the local chronology was established, at first, based on the material analyses through sounding excavations at four sites; Tell Aray 1, Tell Aray 2, Tell abd el-Aziz and Tell el-Kerkh 2, in the Rouj Basin. As our special concerns

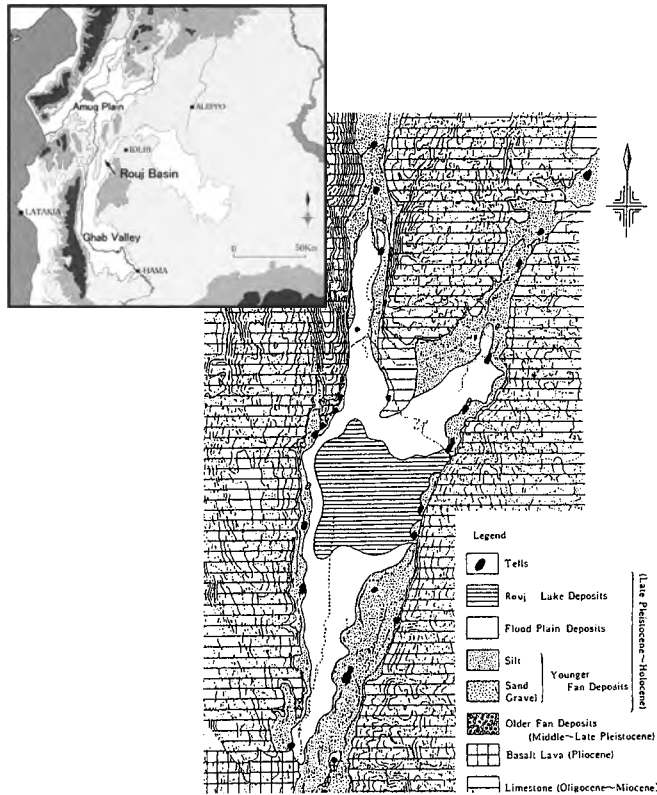


FIGURE 1. Geological Map of the Rouj Basin.

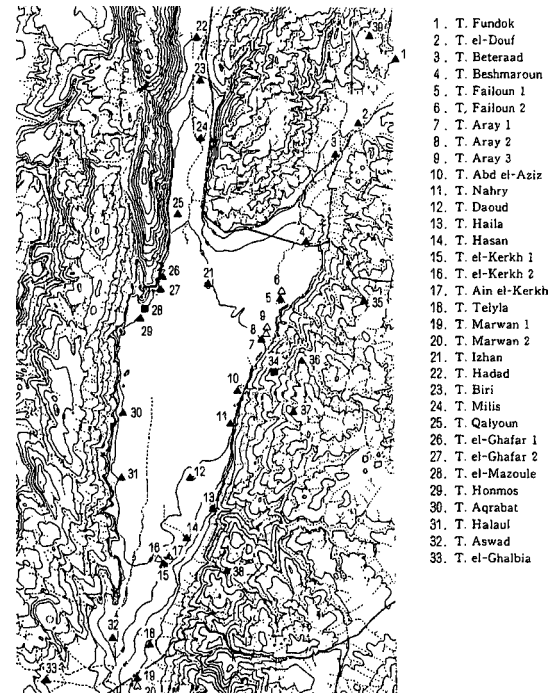


FIGURE 2. Tells in the Rouj Basin.

were on the formation and development of the farming societies, our operations concentrated on the Neolithic and Chalcolithic *tells*. Therefore, the local chronology of these periods went into much more detail than the later periods. The Rouj Basin chronology based on the results of sounding excavations is summarized in Table 1. The soundings for later local chronology were not conducted. However, the subsequent periods were named Rouj 7 (Middle Bronze Age), Rouj 8 (Late Bronze Age), Rouj 9 (Iron Age) and Rouj 10 (Persian to Islamic Periods) for the sake of convenience.

Table 1: The Rouj Basin Chronology

Uncalibrated date	Rouj chronology	General chronology
ca. 3,000–2,000 B.C.	Rouj 6	Early Bronze Age
ca. 3,700–3,000 B.C.	Rouj 5	Late Chalcolithic
ca. 4,500–3,700 B.C.	Rouj 4	Middle Chalcolithic (Ubaid related)
ca. 5,000–4,500 B.C.	Rouj 3	Early Chalcolithic (Halaf related)
ca. 5,300–5,000 B.C.	Rouj 2d	Late phase of Pottery Neolithic
ca. 5,700–5,300 B.C.	Rouj 2c	Middle phase of Pottery Neolithic
ca. 6,000–5,700 B.C.	Rouj 2b	Early phase of Pottery Neolithic
ca. 6,200–6,000 B.C.	Rouj 2a	Beginning of Pottery Neolithic
-ca. 6,200 B.C.	Rouj 1	Pre-Pottery Neolithic B

33 *tells* were registered within the Rouj Basin during 1990–1992 seasons (Fig. 2). Though some of them had already been registered by Courtois (1973), most of them were newly

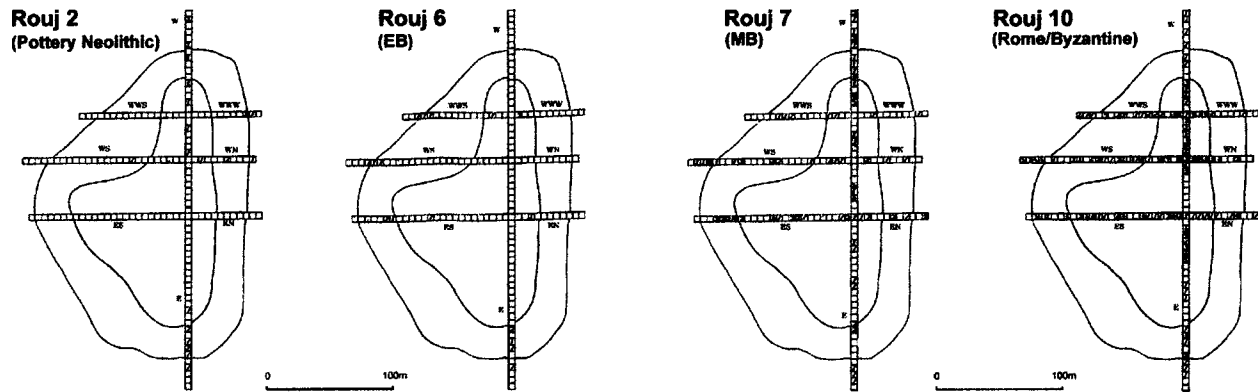


FIGURE 3. The Number of Materials in Each Period at Tell Aray 1.

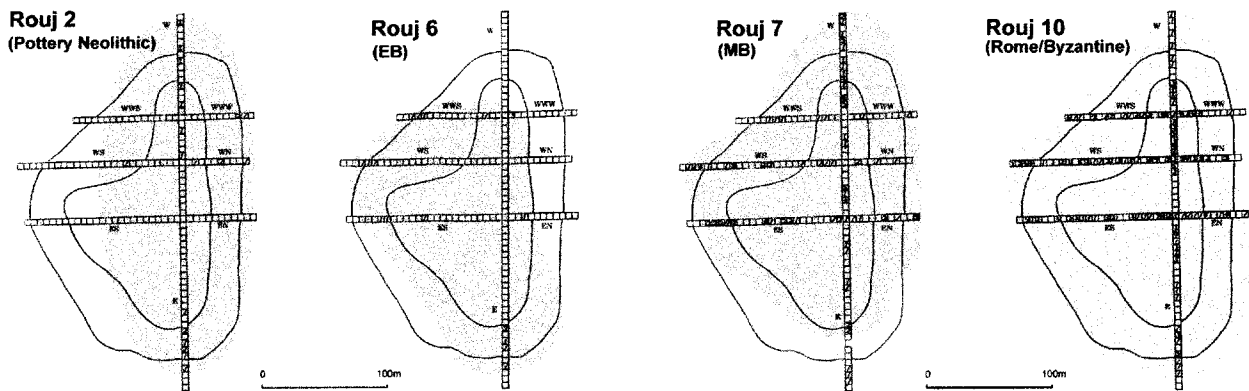


FIGURE 4. The Estimated Settlement Size of Each Period at Tell Aray 1.

discovered by our general survey. We believe that all of the *tell*-type settlements in the Rouj Basin are now registered. Though some of the *tell* complex consist of plural artificial mounds and they were managed together in certain periods, each mound was registered and numbered one by one. The size and the supposed occupation periods according to the above-mentioned chronology of each *tell* are summarized in Table 2.

To define the settlement size of each period of a *tell* is usually difficult, because most *tells* have piled cultural layers of various periods. We adopted the systematic surface collection to estimate settlement size. Fig. 3, 4 shows an instance of our collection system carried out on Tell Aray 1. Two by two meter collection grids were imposed every five meters transversely and longitudinally on the surface of the *tell*, then all materials (mostly potsherds) in each grid were collected. These materials were classified in order of period, and the number of materials from each period was counted (Fig. 3). We estimated the settlement size of each period based on the material density in each grid. If the same grid produced materials belonging to various periods, the density of older materials was estimated to be higher than that of more recent materials. If a meaningful number of older materials were collected at the lower slopes of the *tell*, we estimated the settlement size of the older period by linking the find spots (Fig. 4). This kind of surface collection was executed on eight important *tells*.

The Rouj 1 period saw the beginning of the *tell*-type settlements in the Rouj Basin. Tell el-Kerkh 2, Tell Ain el-Kerkh and Tell Ghafar 1 produced clear evidence of Late PPNB layers. At that time, the former two sites probably formed one settlement. We did not discover clear evidence prior to the Late PPNB, though the new excavations at Tell Ain el-Kerkh produced very early layers of Late PPNB and probably has older cultural layers (Tsuneki et al.

Table 2: Table 2: Size and Occupation Periods of Each Tells of the Rouj Basin.

Table 2. Size and occupation periods of each <i>tells</i> of the Rouj Basin					high occupation		low occupation							
Name of <i>tells</i>	Size				Periods (The Rouj chronology)									
	N-S length (m)	E-W width (m)	Height (m)	Area (ha)	Rouj 1	Rouj 2	Rouj 3	Rouj 4	Rouj 5	Rouj 6	Rouj 7	Rouj 8	Rouj 9	Rouj 10
Tell Fundo	450	300	25	8										
Tell al-Douf	350	250	16	7										
Tell Betraad	230	180	13	3										
Tell Beshmaroun	180	260	22	3.5										
Tell Failoun 1	200	100	25	1.5										
Tell Failoun 2	400	150	4	4										
Tell Aray 1	185	320	24	4										
Tell Aray 2	300	160	6	4										
Tell Aray 3	200	90	3	1.5										
Tell Abd el-Aziz	90	90	2.5	0.6										
Tell Nahry	100	200	12	1.5										
Tell Daoud	350	250	26	6										
Tell Haila	250	250	20	4.5										
Tell Hasan	280	235	23	5										
Tell el-Kerkh 1	450	330	27	10										
Tell el-Kerkh 2	120	120	4	1.5										
Tell Ain el-Kerkh	600	350	10	15										
Tell Telyla	50	50	5	0.2										
Tell Marwan 1	240	210	25	3.5										
Tell Marwan 2	500	270	12	10										
Tell Izhan	340	300	25	7										
Tell Hadad	290	240	22	5										
Tell Biri	100	100	6	0.8										
Tell Milis	200	260	20	4										
Tell Qalyoun	150	150	10	2										
Tell el-Ghafar 1	140	180	4	2										
Tell el-Ghafar 2	80	100	4	0.6										
Tell Honnos	200	200	17	3										
Tell Agrabat	120	170	8	1.5										
Tell Halaul	140	160	10	2										
Tell Aswad	110	130	5	1										
Tell el-Ghalbia	170	130	17	1.5										

1999). Anyhow, people moved to and settled down in the Rouj Basin around the beginning of Late PPNB period. There were at least two settlements, having a few hectares' extent, in the north and south of the Rouj Basin.

Fourteen *tells* were registered in the next Rouj 2 period. This indicates that exploitation of the basin was progressing rapidly during this period. As three *tells* at Tell el-Kerkh and three at Tell Aray probably formed one large settlement respectively at that time, ten settlements were distributed within the basin (Fig. 5). The estimate of settlement size at Tell el-Kerkh reached around 20 ha, and that of Tell Aray reached around 9 ha. Tell Marwan 2 was ca. 5 ha, three *tells* (Tell Failoun 2, Tell el-Ghafar 1, Tell Millis) were around 2 ha, one (Tell Betraad) was around 1.5 ha, and the remaining three (Tell Abd el-Aziz, Tell Telyla, Tell Qalyoun) were smaller than 1 ha (Fig. 5). So, we can depict the existence of a hierarchical settlement pattern within the basin during the El-Rouj 2 period.

Fewer sites were discovered in the subsequent Rouj 3 and 4 periods. Only four sites belonged to Rouj 3, and one more site was added in Rouj 4. Though all of these settlements were founded on the previous Rouj 2 settlements, materials of Rouj 3 and 4 periods were collected in much more limited areas than those of the previous period. This means that the settle-

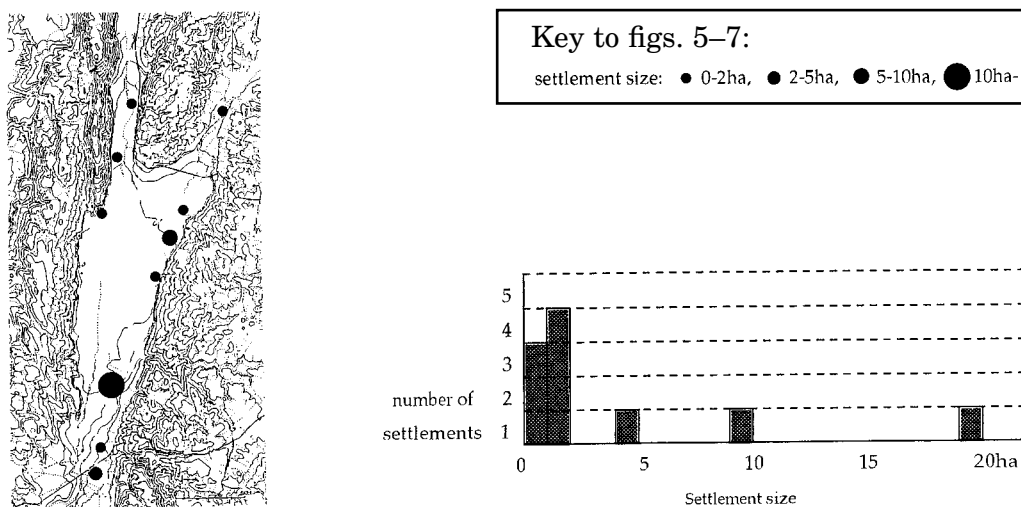


FIGURE 5. Rouj 2, Settlement Pattern and Settlement Size Variation.

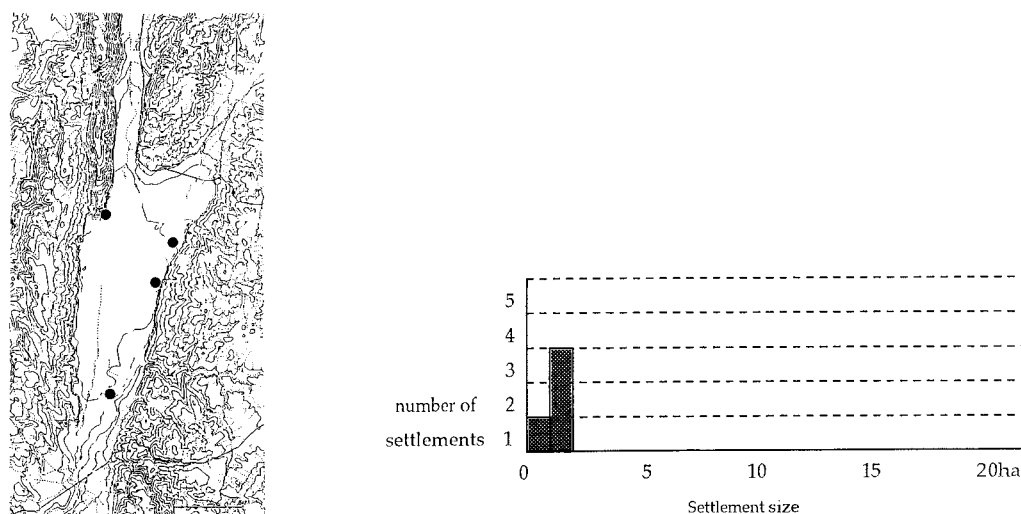


FIGURE 6. Rouj 3, Settlement Pattern and Settlement Size Variation.

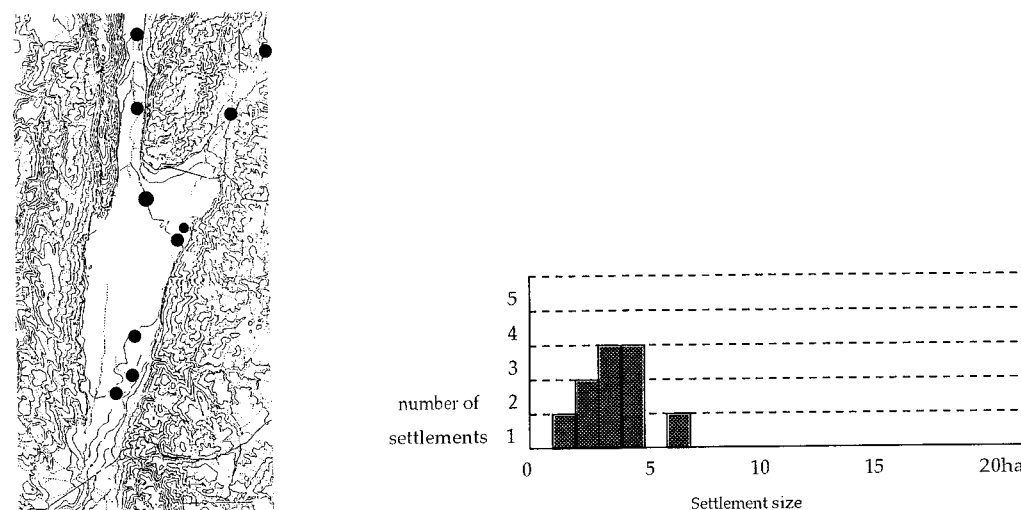


FIGURE 7. Rouj 6, Settlement Pattern and Settlement Size Variation.

ment size decreased rapidly. We can estimate a 1–2 ha extent for three sites (Tell el-Kerkh 1, Tell Aray 1, Tell Ghafar 1) and less than 1ha for another site (Tell Abd el-Aziz) in Rouj 3 (Fig. 6), and a quite similar pattern, with one more site (Tell Ain el-Kerkh) having less than a 1ha extent, continued in Rouj 4. It could be assumed that there was a decline in population coincident with the decrease in settlement size and dispersed pattern.

This declining trend was more conspicuous in Rouj 5 period. We collected very few Amuq F type potsherds, such as chaff-faced ware, at two sites, Tell Aray 1 and Tell el-Kerkh 1. A small number of scraped ware was also discovered from the sounding trench at north of Tell Ain el-Kerkh. However, the sounding trenches of Tell Aray 1 and Tell Ain el-Kerkh did not produce the layer of this period at all, and we do not have sufficient data that can indicate the existence of settlement during this period at these sites.

Repopulation was evident for the Rouj 6 period (Early Bronze Age). Ten settlements were reoccupied or newly established, especially at the end of this period, EBIV. Most of sites were medium sized *tell* having 200–300 m diameter. It seems that eight of ten settlements were 3–5 ha in their size. Tell Izhan, a newly established fortified settlement in the north of the basin, was somewhat larger, and it has around a 7 ha extent (Fig. 7). A sounding excavation at Tell Aray 1 revealed part of a town wall of the early phase of Early Bronze Age (EB I–II), and we can suppose that some settlements had been fortified in Rouj 6.

Discussion

The alteration of settlement patterns of the Rouj Basin reflects the local history. It is worth noting that no ancient settlements were discovered in the flood plain of the basin (Fig. 1). Almost all of the *tells* are located on the ends of the fan deposits, which have been carried by *wadis* of the surrounding limestone mountains, because many springs appear on these points. This “end of fan-deposits” location of the ancient settlements had never changed from Rouj 1 to Rouj 6 periods.

However, the settlement patterns altered drastically from period to period as mentioned above. It is supposed that both natural environmental and socio-political changes have affected the alteration of settlement patterns. There was once an ancient lake in the center of the basin, although this lake has now been reclaimed for agricultural use. Our geologist, Dr. Akahane, made a geological cross section of the ancient Rouj Lake deposits, and he identified that the lithofacies change differs largely between each deposit, indicating that the size of the lake was drastically fluctuating (Akahane 1999: Fig.2). Although we did not fix the absolute date of these fluctuations, it is very probable that the lake fluctuations affected human settlement patterns.

The formation of *tell*-type settlements in the Rouj Basin began suddenly around the beginning of Late PPNB, though the new excavations at Tell Ain el-Kerkh proposed the possibility that the site dates back to the Middle PPNB (Tsuneki et al. 1999). No PPNA and Early PPNB *tell*-type settlements have been discovered, neither in the Rouj Basin, nor in the neighboring areas such as the Ghab Valley, the Amuq Plain, and the Latakian coast, and the reported Neolithic sites in these areas date back only to the Late PPNB periods. It is supposed that the absence of PPNA and Early PPNB sites in northwest Syria is partly due to the scarcity of archaeological investigations and partly because the early cultural layers were obscured by later occupations. However, in spite of the recent intensive and systematic general surveys, no Neolithic sites before Late PPNB have been discovered in the Amuq Plain (Yener et al. 2000, and personal communication of T. Wilkinson). Moreover, the phenomenon that only PPNA and Early PPNB cultural layers were obscured by later occupa-

tions is quite illogical. Therefore, we cannot give up the idea, that there were few settlements in these periods in northwest Syria. We might note that the Late PPNB cultural layers were discovered directly on the virgin soil in the excavations at Ras Shamra (Contenson 1992), Qminas (Masuda and Sha'ath 1983), and Tell el-Kerkh 2 (Tsuneki and Miyake 1995). On this evidence we might guess at the immigration of people with a farming way of life into northwest Syria around the Late PPNB period from elsewhere, such as the Qoueiq, the Middle Euphrates, or southeastern Anatolia where PPNA and Early PPNB sites are densely distributed. Anyhow, we must endeavor to discover the PPNA and Early PPNB sites and continue the excavations of Late PPNB sites to resolve the problem on the neolithization in northwest Syria.

Once the farming villages were established in the Rouj Basin, some settlements expanded very rapidly. The *tell*-complexes at Tell el-Kerkh and Tell Aray had a large settlement area during Rouj 2. In particular, the settlement size of Tell el-Kerkh reached around 20 ha, and it is one of the largest Neolithic *tells* in Western Asia. A hierarchical settlement pattern was detected during this period as mentioned above, and the excavations on the central settlement, Tell el-Kerkh, since 1997 revealed that complex social organization and material administration were at work (Tsuneki et al. 1998, 1999, 2000). Large, remarkable settlements, such as Tell Abu Hureyra and Ain Gazal, appeared over the Levant during the Late PPNB and Early Pottery Neolithic periods, and the excavations on these settlements have indicated the existence of advanced central communities. We consider Tell el-Kerkh as one of these examples, and the results of our investigations have forced us to reconsider the emergence of towns and cities in the history of West Asia.

Toward the end of the Rouj 2 period, the settlements in the Rouj Basin were gradually declining in their prosperity. At Tell el-Kerkh the settlement size of Rouj 2d became much more limited than that of Rouj 2c. The eastern influence, including Samarra and Early Halaf potsherds appeared in the Rouj 2d layers simultaneously with the decline of settlements in the Rouj Basin. These eastern influences have become more remarkable in the material culture of the following Rouj 3 and 4 periods. The decline of settlements in Rouj 3 and 4 periods might be examined in the whole region of northwest Syria. Especially in the Amuq Plain, the settlement pattern of simultaneous periods (Amuq C–E) was quite different from the small village, dispersed pattern of the Rouj Basin. A two-level hierarchical settlement pattern, dominated by Tell Kurdu, was detected there (Yener et al. 2000). The excavations of Tell Kurdu address large and hierarchical communities containing the administrative technology complex. It is note-worthy that the material assemblage of Tell Kurdu indicating administrating complexity, i.e., seals, baling tags, and tokens (Yener et al. 2000: Figs. 22 and 23), is quite similar to that discovered from the Rouj 2 layers of Tell el-Kerkh (Tsuneki et al. 1998, 1999, 2000). The appearance of the complex and hierarchical societies in the Levant date back to the Late PPNB and Early Pottery Neolithic periods as mentioned above, and the administrative technology with stamp seals, sealings and tokens had been developed since these periods in northwest Syria. The administrative technology adopted at Tell Kurdu carried on the traditions of Neolithic settlements in northwest Syria, especially the Rouj Basin. Therefore, we may propose the possibility of the migration of people from the Rouj Basin to the Amuq Plain around the end of the Rouj 2 period for the explanation of the decline of settlements in Rouj 3 and 4 periods in the Rouj Basin, though we cannot propose the cause for the migration.

Repopulation and the concentration of medium-sized settlements in the Rouj 6 period probably had a relation with the formation and prosperity of the great kingdoms in the third millennium B.C. The distance from Tell Mardikh, the capital of the kingdom of Ebla, to the

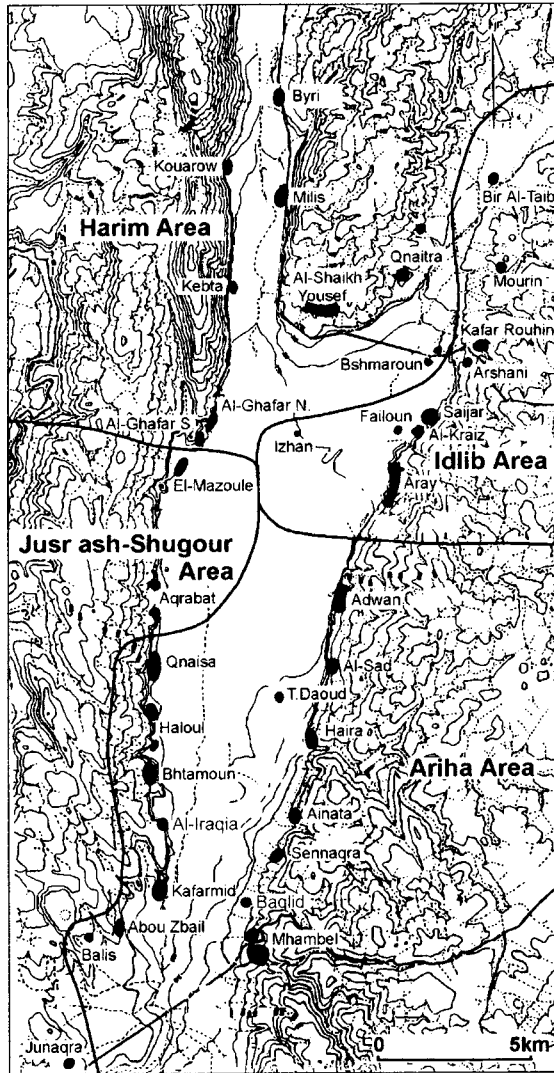


FIGURE 8. Modern Villages in the Rouj Basin.

Table 3: Modern Villages in the Rouj Basin.

(Number of households, population and village area)					
Idlib Area					
Name of village (section)	Number of households	Population	Village area (ha)	Number of people per household	Number of people per 1ha village
Bir al-Taib (Maaratmusrin)	20	109	~2	4.36	
Mourin (Maaratmusrin)	3	23	~2	7.67	
Kafar Rouhin (Markaz Idlib)	109	695	4	6.38	173
Arshani (Markaz Idlib)	34	220	~2	6.47	
Saijar (Markaz Idlib)	100	706	5	7.06	141
Al-Kraiz (Markaz Idlib)	61	479	4	7.85	120
Failoun (Markaz Idlib)	6	62	~2	10.33	
Izhan (Markaz Idlib)	2	14	~2	7	
Aray (Markaz Idlib)	84	576	5	6.86	115
Ariha Area					
Name of village (section)	Number of households	Population	Village area	Number of people per household	Number of people per 1ha village
Adwan (Mhambel)	131	809	7	6.17	116
Al-Sad (Mhambel)	28	172	~2	6.14	
Tell Daoud (Mhambel)	35	252	~2	7.2	
Haila (Mhambel)	54	350	~3	6.48	
Ainata (Mhambel)	12	66	~2	5.5	
Sennagra (Mhambel)	14	123	~2	8.79	
Baglid (Mhambel)	19	162	~2	8.53	
Mhambel (Mhambel)	351	2313	16	6.59	145
Balis (Mhambel)	23	138	~2	6	
Abou Zbail (Mhambel)	29	160	~2	5.52	
Kafarmid (Mhambel)	63	386	~3	6.13	
Al-Iraqia (Mhambel)	?	?	~2	?	
Bhtamoun (Mhambel)	62	395	~3	6.37	
Haloul (Mhambel)	45	297	~3	6.6	
Knaisa	246	1646	11	6.69	
Jusr ash-Shugour Area					
Name of village (section)	Number of households	Population	Village area	Number of people per household	Number of people per 1ha village
Junaqra (Markaz Jusr ash-Shugour)	30	170	~2	5.67	
Agrabat (Darkoush)	57	403	3	7.07	134
El-Mazoule (Darkoush)	76	429	~3	5.64	
Harim Area					
Name of village (section)	Number of households	Population	Village area	Number of people per household	Number of people per 1ha village
Al-Ghafar south (Kafartaharim)	32	194	~2	6.06	
Al-Ghafar north (Kafartaharim)	71	451	?	6.35	
Kepta (Kafartaharim)	86	496	6	5.77	83
Kouarow (Kafartaharim)	82	429	4	5.23	107
Byri (Kafartaharim)	100	687	?	6.87	
Milis (Kafartaharim)	234	1272	8	5.43	159
Al-Shaikh Yousef (Kafartaharim)	175	1049	8	5.99	137
Qnaitra (Kafartaharim)	36	222	~2	6.17	
Tell Bshmaroun (Kafartaharim)	18	105	~2	5.83	1430
total or average	2528	16060		6.53	119

Rouj Basin is only 30 km. It is supposed that the Rouj Basin, with its abundance of water and fertile soil for farming, must have been closely connected with Ebla's territory. This basin has been one of the important routes from the Middle Euphrates to the Mediterranean coast or to the south through the Ghab Valley, and the railway nowadays from Aleppo to Latakia still passes along the eastern edge of the Rouj Basin. The concentration of medium-sized settlements and the preference of the location on the eastern edge of the basin during Rouj 6 and 7 periods suggest that the Rouj Basin was controlled by a large central power from outside, especially from the east, and the settlements within the basin probably worked as stages on the routes.

A view from a modern settlement pattern

In order to form a further understanding of prehistoric settlement patterns of the Rouj Basin, I propose here the data of modern settlement pattern, population, and administrative division of the Rouj Basin for comparative studies. I gathered the administrative informa-

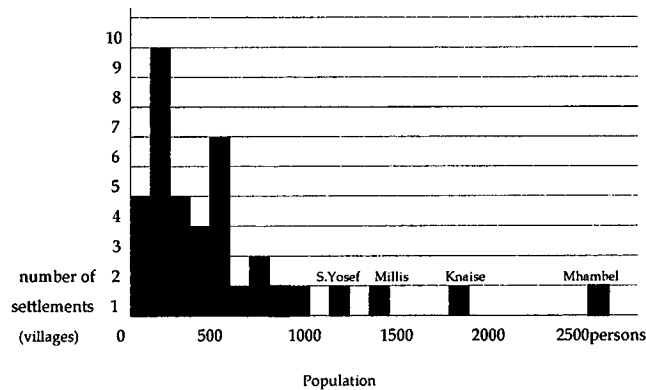


FIGURE 9. Modern Population Variation.

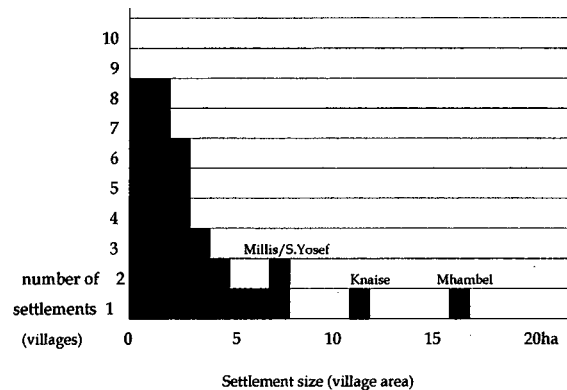


FIGURE 10. Modern Settlement Variation.

tion by reading the household resister book (1981) at the local government of Idlib. Each village area was estimated based on the administrative map of the Idlib District (1/100,000) published in 1990.

There are thirty-six modern villages within the Rouj Basin (Fig. 8, Table 3). The largest settlement is Mhambel, which is located at the southernmost basin and on the main road between Ariha and Jusr ash-Shugour which are the area centers. The population and village size of Mhambel are much larger than those of the rest of villages in the basin. I made diagrams of the modern population variation (Fig. 9) and the modern settlement size variation (Fig. 10) of the Rouj Basin. They show similar figures, and the settlement size variation almost reflects the population variation. The diagram of the modern settlement size variation shows at some level a hierarchy like that of Rouj 2 (Fig. 5). Now, let us verify whether this kind of diagram reflects the actual hierarchical administration. In other words, I will test whether Mhambel works as a present-day administrative and commercial center for the whole Rouj Basin or not.

Idlib District (*Mohafaza*) is divided into five areas (*Monteqa*), and each area has some lower administrative sections (*Nahia*) (Fig. 11). Mhambel is one of the section centers belonging to Ariha Area. At each section center people can get ordinary public services, such as police protection, family registration, pay telephone fees. For higher public services, such as military registration, land registration, judicial service, they must go to the area centers and sometimes district capital. Therefore, Mhambel is a lower, secondary administrative center which renders ordinary public services. There are 15 villages (Mhambel included), in southern Rouj Basin, belonging to Mhambel Section (Fig. 8, Table 3), and the people of these villages get the ordinary public services at Mhambel. The village people in the southern basin usually go to the shops at Mhambel for everyday goods. However, they often go to the standing markets of Ariha and Jusr ash-Shugour to buy miscellaneous goods for daily use, because there is no standing market at Mhambel. The commercial value of Mhambel for the villagers in the southern basin is less important than its administrative value. There are another 21 villages in the northern Rouj Basin belonging to other administrative sections and areas, and the people of these other villages go to Mhambel neither for the public services nor for shopping.

Therefore, we can conclude that Mhambel plays some administrative and a few commercial roles for the southern Rouj Basin, but none for the northern basin. The villages in the Rouj Basin are divided into four administrative areas (Fig. 8, 11, Table 3), and this division probably came from the presence of the old lake at the center of the basin. The lake had

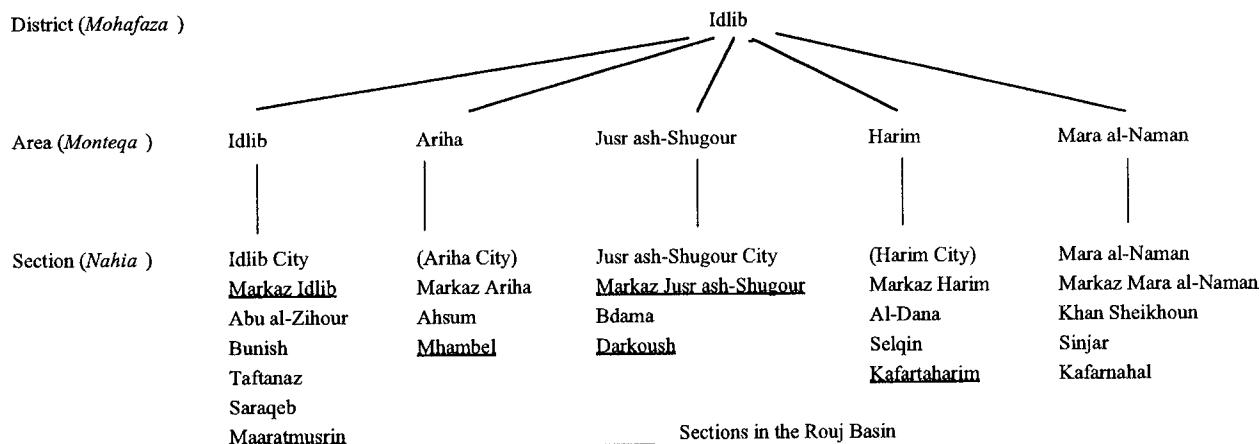


FIGURE 11. Administrative Division of Idlib District.

separated the northern part of the basin from the southern part where Mhambel is located. So, there is no socio-economic center which dominates the entire the basin. The public office of each area outside of the Rouj Basin controls the villages of the Rouj Basin respectively, and the entire basin is grouped not by a section center, not even by an area center, but by a district capital. This fact indicates that the diagram of modern village size variation in the Rouj Basin (Fig. 10) does not reflect the whole socio-economic system of the basin. However, if we make a diagram of modern village size variation in Mhambel Section, it almost reflects the actual socio-economic system working in the southern Rouj Basin. Mhambel works as a secondary administrative center within this range.

This comparative study gives us the following guidelines. First, when we look for the regional administrative or commercial center in the diagrams, we must note the possibility of the existence of higher centers beyond the range of the diagram. Therefore, diagrams of variation in prehistoric settlement size must be made based on the data gathered on a broad scale. Second, the socio-economic range is not always the same as the geographical range. We can identify the actual socio-economic center when we understand the range which the center controls. I believe that the socio-economic range can be defined archaeologically. Third, the settlement size variation almost reflects the population variation, and the settlement size differentiation indicates more or less socio-economic complexities. If we succeed in making the precise settlement patterns on a broad scale, they reflect the real socio-economic systems at work there.

Acknowledgements

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The Syrian-Italian-German Mission at Tall Mishrife/ Qatna: Results of the First Season in 1999

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Abstract

One of the main goals of the recently started new excavations at Tell Mishrife/Qatna, conducted by the DGMA Damascus and the Universities of Udine and Tübingen, was the rediscovery of the Bronze Age palace. This building, excavated by Du Mesnil du Buisson in the 1920s, was covered by the modern village of Mishrife, evacuated in 1982. The aim was to identify the limits of the palace and to verify the correctness of the plan published by the French archaeologist. Further, the dates of foundation and destruction of the building should be cleared.

Several rooms of the palace were excavated during the 1999 season: the “Cour du Throne”, the “Salle du Grand Vase”, the so-called “Temple de Nin-Egal”, the “Haute-Lieu” and the “Salle des Jarres”. the stratigraphical sequence shows that the building was founded either in the Early Bronze Age IV or the Middle Bronze Age I and was in use until the Late Bronze Age.

In August 1999 the Directorate General of Antiquities and Museums of Syria, the University of Udine (Italy) and the University of Tübingen (Germany) signed an agreement for co-operating in a joint archaeological expedition at the site of Tall Mishrife, which is identified with the important Old and Middle Syrian city of Qatna.¹ The project is co-directed by Michel Al-Maqdissi, Daniele Morandi Bonacossi (Vice-Director Marta Luciani) and Peter Pfälzner (Field Director Mirko Novák). The first excavation season took place in the summer and autumn of 1999.

Qatna was—besides Aleppo—the major Syrian kingdom and commercial centre during the Old Syrian Period, from around 1900 to 1500 B.C.² Qatna’s location at the crossroads between the main North-South route from Anatolia to Palestine and Egypt and the important East-West route from Mesopotamia through the Syrian Desert to the Mediterranean shore was the basis for its outstanding commercial, strategic, and political importance.³

1. We wish to express our gratitude to the Director General of Antiquities and Museums and to Mr. F. Jabbour, Director of the Department of Antiquities of Homs and their staff for their friendly support and active interest in our work.
2. For the political role of Qatna see Klengel 2000; furthermore Helck 1971, Klengel 1992 and 1997, Kühne 1982, Morandi Bonacossi et al. 2000, Novák and Pfälzner 2000.
3. For the trade route through the Syrian Desert see Klengel 1997: 365f., Ismail 1996: 129f., Abdallah 1996: 131ff. and Mar’i 1996: 137. The journey from the Euphrates (Terqa) to Qatna lasted 10 days as in the Mari letter ARM I 66 (Dossin 1950: 126–127); see also Luciani 1996: 334–336, Mar’i 1996: 137, and Klengel 2000.

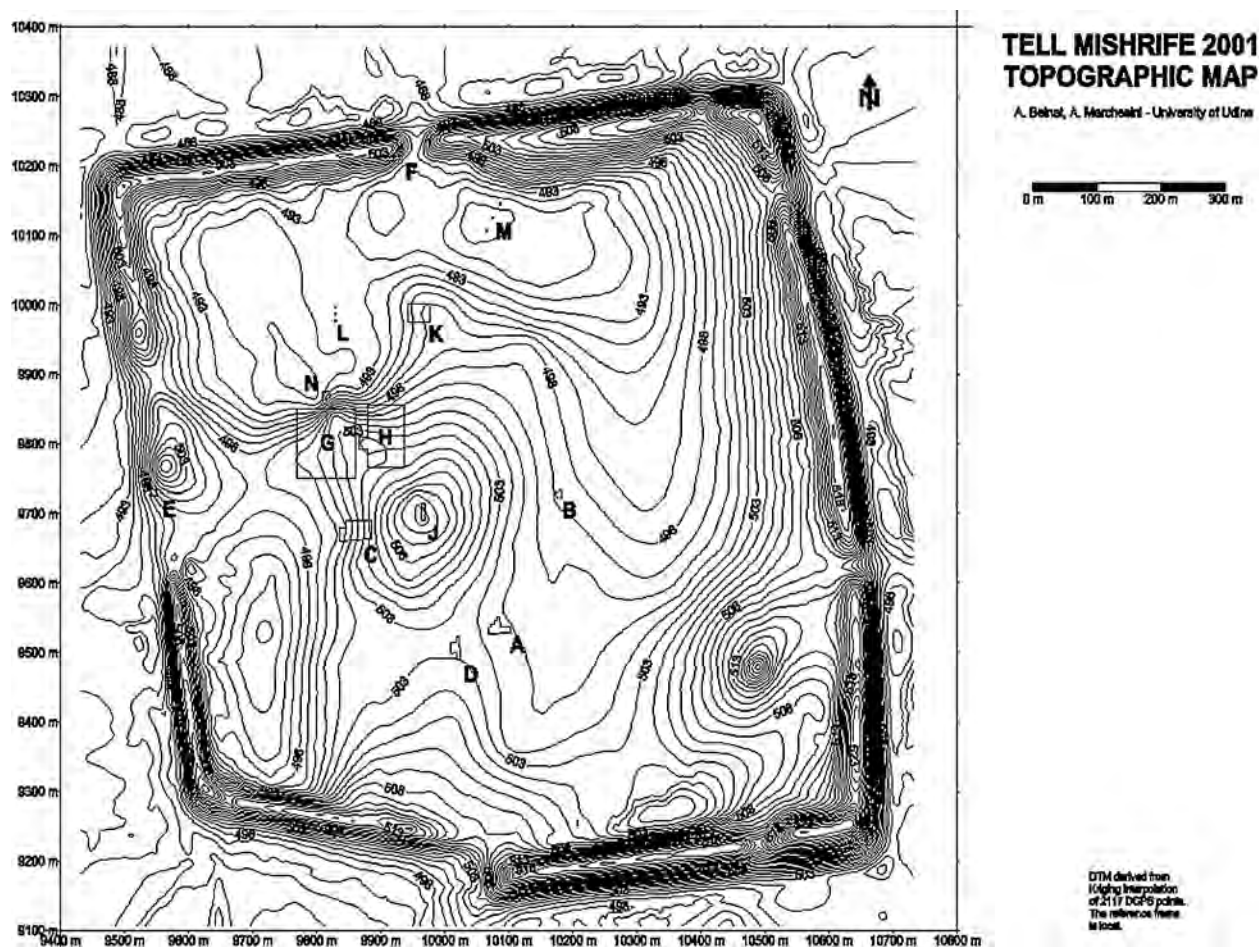


FIGURE 1. Topographic map of Tall Mishrife with excavation areas.

The Old-Assyrian kingdom under Shamshi-Adad established close diplomatic and commercial relations with king Ishkhi-Adad of Qatna around the mid or second half of the 18th century B.C.⁴ During the Middle Syrian Period Qatna was a local kingdom⁵ being fought over by the military and political power of the Egyptians and the Hittites.

Tall Mishrife is still nowadays an impressive site located 18 km north-east of the modern city of Homs, in a large fertile plain at the interface between the dry steppe of the Palmyra Region and the nearby Orontes valley.⁶ A ditch and monumental ramparts almost perfectly square surround the site (Fig. 1). The ramparts still stand up to a height of 15–20 meters and enclose an area of 110 ha. Four city gates cut through the city walls, one in the middle of each side.⁷

4. According to short chronology, Luciani 1996: 87, note 5.

5. Invaluable information comes from the famous Tell al-Amarna letters. For a new reading with interpretation, cf. Liverani 1998, 1999.

6. The economic and ecological situations are described by Wirth 1971: 391ff.

7. The topographic and photogrammetric survey of the site, which allowed us to produce this map, was accomplished by A. Beinat and A. Marchesini (University of Udine). The helicopter for the aerial coverage of the site was kindly provided by the Syrian Ministry of Defence, to which we are deeply indebted.

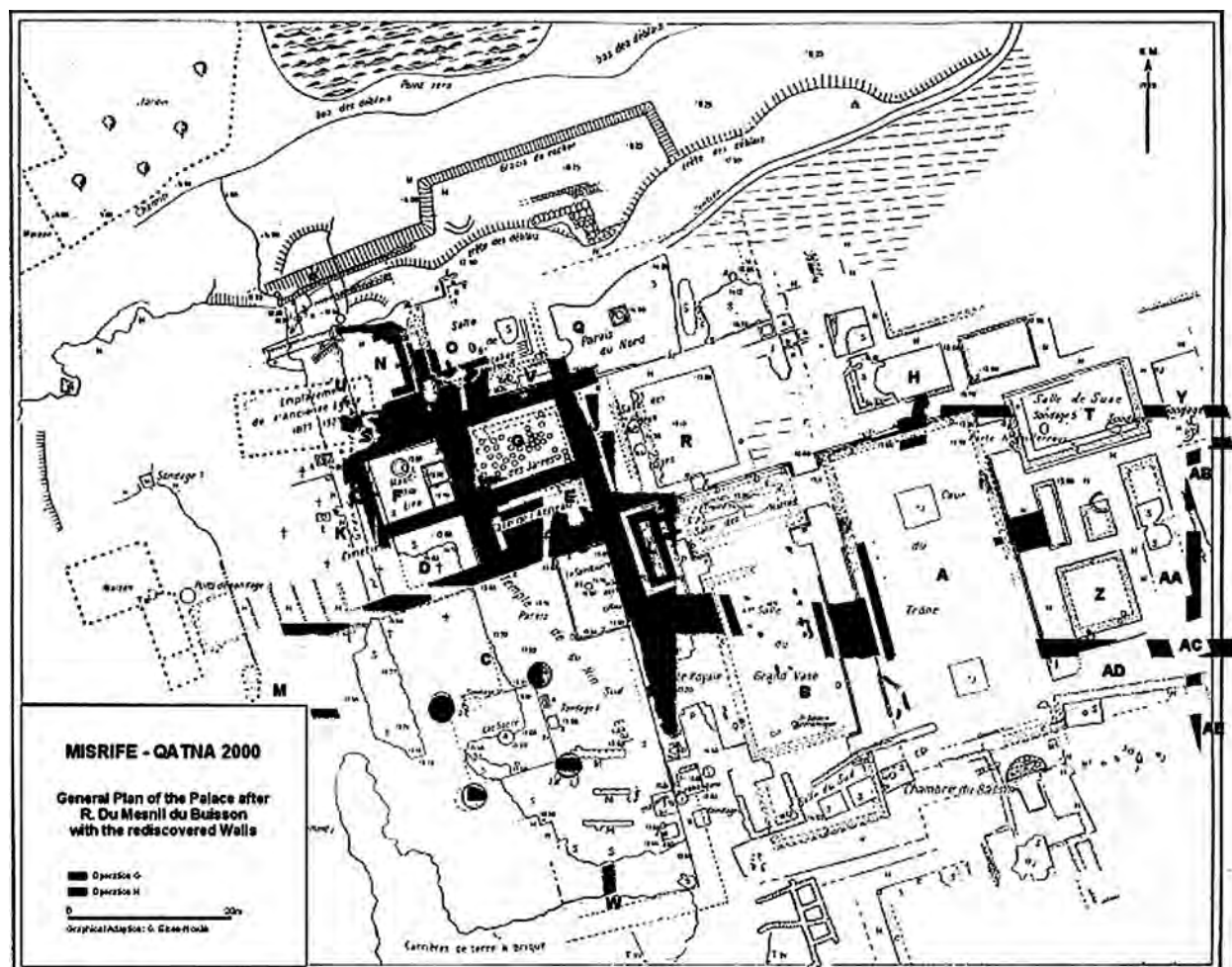


FIGURE 2. General Plan of the Bronze Age Palace as published by Du Mesnil du Buisson 1935 with the rediscovered walls.

Previous archaeological work on Tall Mishrife was carried out by the French Count R. du Mesnil du Buisson from 1924 to 1929⁸ and by a Syrian Expedition from 1994 to 1998 directed by Michel Al-Maqdissi.⁹ Du Mesnil du Buisson had opened seven large excavation areas in different parts of the site. The most extended excavation had taken place in the northern part of the Acropolis, called the “Butte de l’Eglise”, where a large architectural complex covering a surface of almost 1 ha was exposed.

Excavations at the Bronze Age Palace

Du Mesnil du Buisson in the 20s distinguished three architectural units in the “Butte de l’Eglise”, which he labelled as “Palace”, “Temple of Nin-Egal”, and “High Place”.

The western wing has been suggested to be the Temple of the Goddess Belet-Ekallim (NIN.EGAL) on the basis of a number of cuneiform tablets, discovered in its north-eastern

8. The first campaign was conducted in 1924, the following three from 1927 to 1929. Cf. du Mesnil du Buisson 1926, 1927, 1928, 1930, and 1935.

9. Abou Assaf 1997; al-Maqdissi 1996 and 1997.

corner.¹⁰ The northwestern part was identified as a “High Place” because of some strange installations, determined as “Massebohs” and a “Holy Tree of Ashera”.

The comparative analysis of the architectural layout, however, stresses that all three units probably have to be identified as different wings of the same building.¹¹ It follows the typical scheme of an Old-Babylonian palace, comparable to the “Palace of Zimri-Lim” at Mari: The “Temple of Nin-Egal” was the courtyard of the palace with an additional administrative wing, similar to the area surrounding Court 106 at Mari. The so-called “Salle du Grand Vase” and “Cour du Throne”, which could be entered from the “Temple of Nin-Egal” through the “Porte Royale”, were more likely a sequence of two representative halls equal to Room 64 and Room 65 at Mari.

However, this important palace of the kings of Qatna was excavated according to what now appear old scientific standards. The results are that neither the architectural ground plan nor the distribution of finds are fully understandable. For this reason a re-excavation and re-evaluation of the building, which must have been the palace of the rulers of Qatna, is one of the goals of the joint mission at Tall Mishrife. The major aims of this research programme are the following: (1) to give a complete and detailed architectural plan of the palace; (2) to establish a precise stratigraphy for the building; (3) to precise the dating of the actual building and probable earlier phases; (4) to reconstruct the function of units and single rooms within the building; (5) to fully understand the socio-political and economic role of the palace (Fig. 2).

The work in the palace was made possible through the complete abandonment of the modern village which covered it. The resettlement of the inhabitants to the modern town of Mishrife in 1982 was initiated by the Directorate General of Antiquities and Museums. It was a very ambitious and far-sighted initiative for the sake of modern archaeological research at Qatna. The now abandoned houses had been erected directly on top of the ancient palace floors as excavated by du Mesnil du Buisson, thus partially damaging but also protecting a large part of the ancient ruins below them.

Two excavation fields were established in the palace area. Area H lies is the eastern part of the palace and Area G in its western part.¹²

In both areas a common stratigraphic sequence was encountered, which has been reconstructed as follows: Phase G/H 1, the modern surface of the site, covers Phases G/H 2–4, which are defined as the walls and floors of the modern village. Phases G/H 5–6 belong to an Iron Age occupation of the palace area. Phase G/H 7 represents the latest use of the palace and should be dated to the Late Bronze Age. Phase G/H 8 consists of the hard gypsum mortar floors already discovered by du Mesnil du Buisson that can be dated in their origin to the Middle Bronze Age. Underneath, Phase G/H 9 represents most probably a construction phase of the palace that should be dated to the Middle Bronze Age I. The earlier G/H 10 phase reveals architectural structures that can be dated to the Early Bronze Age IV on the grounds

10. Du Mesnil du Buisson 1935. For the tablets see Bottéro 1949 and 1950.

11. Abdul-Rahman et al. 2000: 36, Novák and Pfälzner 2000: 262ff.

12. Work in the western part of the Palace Area (Operation G) was conducted by the German team directed by P. Pfälzner and M. Novák. Members of the staff were A. Ahrens, G. Elsen-Novák, A. Gilibert, S. Mankel, L. Petersen, K. Sternitzke, A. Wissing, and N. Zwingmann. In the eastern part (Operation H) a joint Syrian-Italian team has been working, directed by A. Abdulrahman, and including archaeologists A. Barro, M. Iamoni, C. Pappi.

of the recovered ceramics. The excavations of du Mesnil du Buisson had not touched the lower two floor levels, so that they might provide us with undisturbed, original material.

In Area H evidence has been found for the throne room and adjoining rooms. The throne room measures approximately 20 by 40 m. The floor of the throne room—originally excavated by du Mesnil du Buisson—had been preserved in large parts. Within the room a jar, which is inserted into the floor, was found in situ, on the same spot where du Mesnil du Buisson had already discovered it. The jar, which is situated in the middle axis of the throne room, had possibly a ceremonial function.

The foundations for the walls of the throne room are extremely thick (4.5 meters wide) and well built. They are lined on both sides by constructions that functioned as a system to protect the foundations of the walls from moisture. These constructions consist of mud-brick walls (1.5 meters thick), running parallel to the foundation wall at a distance of 0.9 meters on both sides of it. The gap between the foundation wall and the curtain walls was filled up completely with loose stones. These stone-filled trenches were called “couloirs” (i.e., “corridors”) by du Mesnil du Buisson. They obviously functioned as drains¹³ for water or humidity to be collected from below the floors inside the rooms. The impressive foundation and draining system of the throne room walls reached a total width of 9 meters. Parallels to such a monumental system, which was also explored in operation G, are to our knowledge so far unknown in palatial architecture of the ancient Near East.

Underneath the upper floor level of the throne room, which might have been used down to the Late Bronze Age, an earlier floor was identified which seems to have been a construction level. On the basis of the pottery materials this occupation phase can be dated to the Middle Bronze Age I–II.

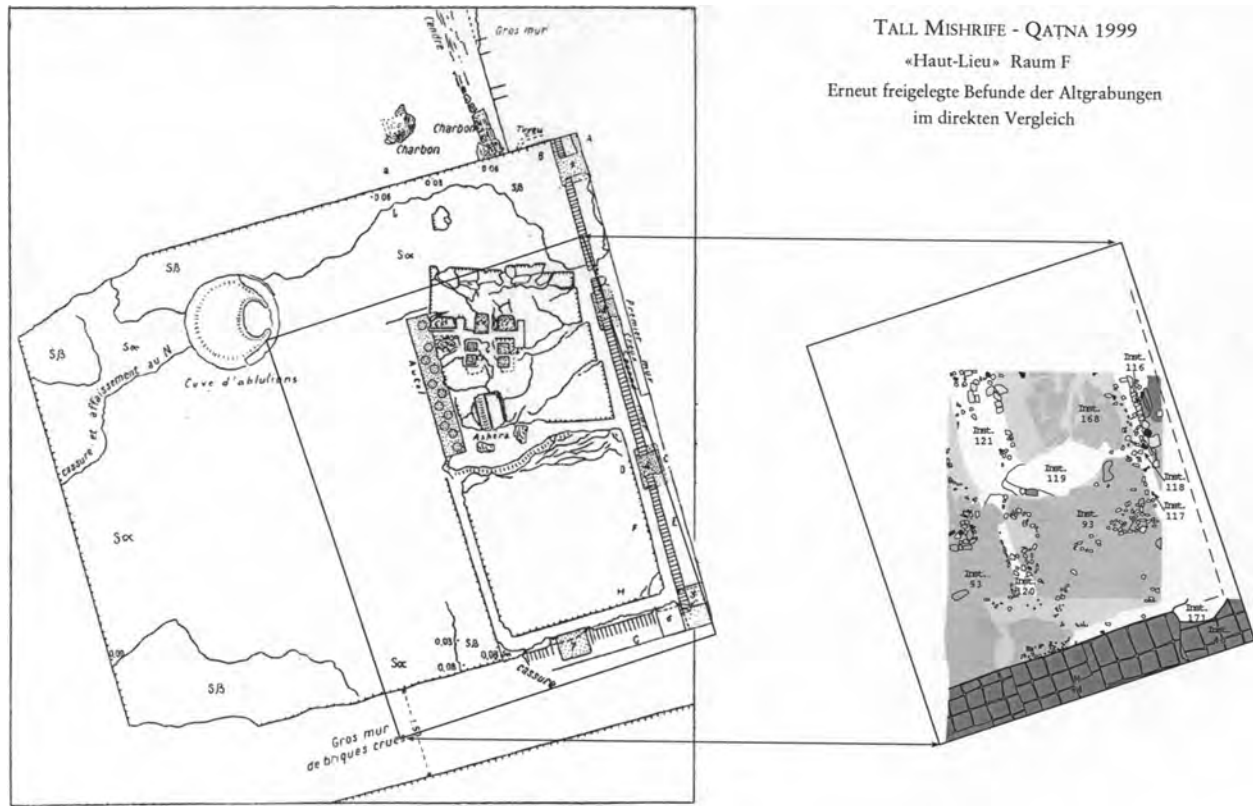
Below the older floor a destruction layer caused by a violent fire is deposited. It covers another floor, which is the third floor reached in this area. The recovered ceramic material indicates that it could belong to a building from the Early Bronze Age IV.

Operation G is located in the western part of the Bronze Age palace. In this area an “H-shaped” system of long test trenches was laid out in the season of 1999.

Five Rooms of the palace could be traced. Their walls correspond to the walls indicated in Du Mesnil du Buisson’s plan of 1935. The largest unit is the so called “Temple of Nin-Egal”, which is now labelled Hall C. To the north of it, lay Rooms D and E, the latter formerly known as “Salle de l’Anneau”. To the north of this row, two more rooms could be retrieved: the “Salle des Jarres”, now Room G, and the so-called “High-Place”, that is now labelled Room F. In a trench towards the west, in a so far not excavated area, the limits of a room were found, that had not been traced before. This proves that the building extended further to the west than du Mesnil du Buisson had thought.

Room C, Du Mesnil’s “Temple of Nin-Egal”, is obviously the large courtyard in front of a first and a second throne room (see above). In the case of Qatna, the architecture is extraordinarily interesting, because there is evidence that the courtyard was covered, which means, that it was actually a vast hall. This is indicated by two column bases, which had extremely massive foundations. The basalt bases themselves, already excavated by du Mesnil du Buisson, have—in the meantime—been robbed, bringing to light their substructions. These are deep round pits with a diameter of about 3.5 meters lined by a wall of stones, and filled up completely with pebbles. Additionally a square wall system was built around the pit, sup-

13. Du Mesnil du Buisson 1935: 72.



Plan du sanctuaire dit Haut-Lieu après déblaiement total et remise en place de divers fragments, spécialement de la butée C 6.

FIGURE 3. Plan of Room F as published by Du Mesnil du Buisson 1935 and with the rediscovered walls.

porting its stability. Originally, four column bases existed in Hall C. Columns that were so solidly founded, must have supported a roof. The north wall of the room had a width of 5 meters and could equally support heavy weight. With a size of 37 meters east-west and probably 45 meters north-south, this hall is probably the largest covered space so far known in the Bronze Age architecture of the ancient Near East. These constructions have been erected in Phase G 9. Traces of the workmen's picks are still observable in this phase.

In Room G, Du Mesnil's "Salle des Jarres", the storage jars that had been excavated in the 20s had been left behind at their place of discovery, broken in hundreds of pieces. They are very important for dating, because they lay on a mud floor, which is the youngest floor within the palace (Phase G 7 dating to the Late Bronze Age).

To the west lies Room F, labelled "High Place" by the former excavator. Du Mesnil du Buisson's interpretation of the room as a sanctuary of the Biblical type is not convincing. In order to reconstruct the function of this room, Room F was re-excavated (Fig. 3). The massive gypsum mortar floor up to 0.4 meters thick, a canalisation, and a deep hole in the floor could be retrieved. In this room there is also evidence for an older floor that abuts a setting of big stones and a mud-brick installation. A plastered stone protection of the walls existed in connection with the older floor in this rooms.

The results of the campaign of 1999 suggest, that it will be possible in the future campaigns to largely reconstruct the architecture, the chronology and the function of the important and famous palace, residence of the kings of Qatna.

Operation J¹⁴

Operation J is located on the top of the central mound, the highest prominence within the topographic system of the acropolis (Fig. 1). Four settlement periods have been identified on the top of the central mound: recent and sub-recent period, Iron Age II, Middle Bronze Age and Early Bronze Age.

The Iron Age architecture of Operation J was badly disturbed by numerous recent and Iron Age pits and intrusions. Of particular interest is Phase 1, consisting of a dwelling with at least two rooms linked with a courtyard with domestic installations (grinding stones, pestles, mortars). In the western room of the dwelling a storage jar was embedded in the floor. The jar contained a fragmentary basalt fruit stand, a two-handled juglet, and a fragmentary basalt bowl. According to the excavated pottery the house of Phase 1 can be dated to the late Iron Age II or possibly even early Iron Age III (i.e., to the eighth-early seventh centuries B.C.).

Phases 2–4 dating to the same period were extremely fragmentarily preserved and did not allow us to reconstruct complete plans of buildings. In Phase 5 (Fig. 4), which can be firmly placed in the late Iron Age II, the summit of the central mound was occupied by an outdoor area. It displays a complete functional unit equipped with installations for the temporary storage of cereals (such as a silo and conservation jars), their processing (mortars, grinding stones, pestles, a mud-brick platform and a shallow mud-brick basin), and a roughly square grill-planned building interpreted as a granary for the permanent storage of cereals or flours. To the south of the granary part of a further building faced the courtyard, which in this area was paved with pebbles.

In the underlying Phase 6, an Iron Age II inhumation cemetery occupied the area. Six burials devoid of grave goods have been identified and excavated up to now. Weak evidence of a hierarchic differentiation among the buried individuals is provided only by the grave typologies. While four burials are simple pit graves, two showed a mud-brick covering of the pit with a single slope. Circular ash deposits and an intentionally broken and defunctionalised jug—traces of a possible funerary ritual—were found on the graves with a mud-brick covering, while a similar evidence could not be detected in the case of the pit graves. Anthropological analysis of the skeletons has shown that in the graves with mud-brick coverings females were buried, while pit graves seem to have been reserved to male inhumations.¹⁵ The bodies were lying on their right side with extended or slightly flexed legs. The hands were usually joined together on the pelvis; the bodies had an E-W or ENE-WSW orientation and were facing S or SE. Phase 6 therefore marks a change in the utilisation of the summit of the central mound, thus representing a strong break in the continuity that marked the area in the previous and following phases of the Iron Age, when the summit of the acropolis displayed a decided domestic and productive character.

During the previous phase (Phase 7) the area was occupied by an outdoor surface, which was partly paved with pebbles and equipped with installations for storage—such as a large silo—and working activities such as platforms and dumps. Phase 8 is an archaeologically elusive settlement horizon with numerous pits cutting the underlying trodden floor of Phase 9.

14. Archaeological investigation in this area was conducted by D. Morandi Bonacossi, M. Hammud, G. Garna, A. Intilia, and K. Sati with the additional co-operation of L. Turri and C. Mordente.

15. The anthropological investigations on the human remains were carried out by A. Canci.

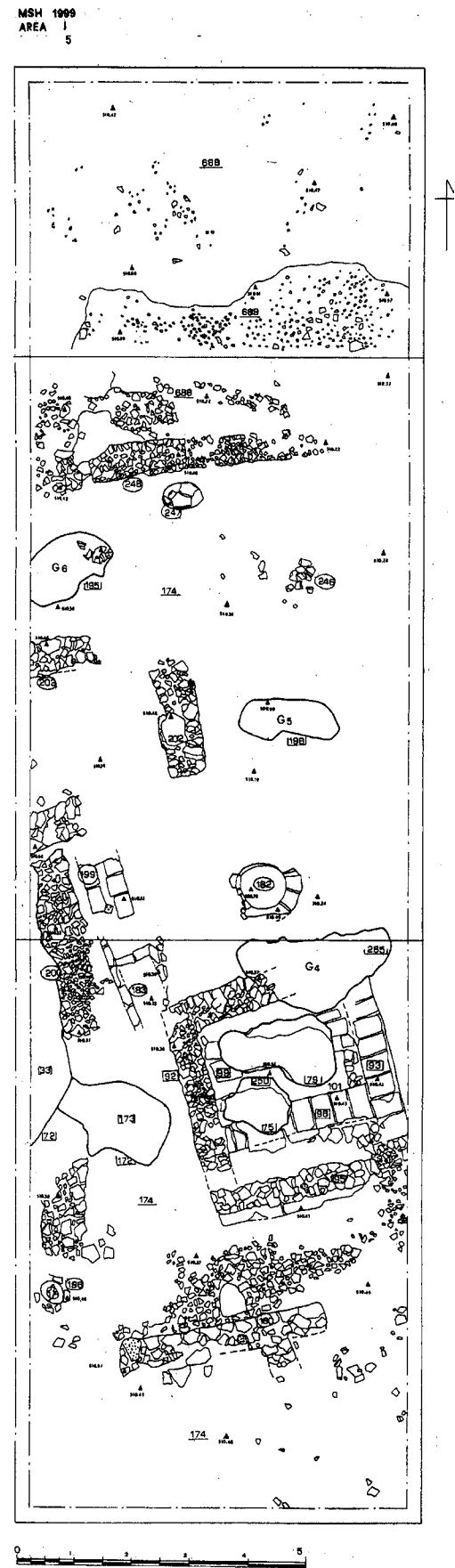


FIGURE 4. Plan of Operation J, Phase 5.

To the earliest Iron Age II settlement phase (Phase 9) two poorly preserved pottery kilns containing large quantities of ash and clay slags could be attributed. The finds concentration suggests an interpretation of this area as an open-air space for pottery production. On the trodden floor a circular rock crystal artefact, plano-convex in shape, was discovered. This carefully ground and polished piece of rock crystal, which has a diameter of 16 mm and a thickness of 1.8 mm, might have been used as a crude magnifying lens or, less probably, as a furniture inlay. The “Qatna lens” is contemporary and almost identical although slightly smaller to the famous “Layard lens” found by Sir H.A. Layard in 1853 in a room of the Northwest Palace of Ashurnasirpal II at Nimrud.¹⁶ In the southern part of the operation a square building of unknown function that had been pulled down to the floor level was cleared.

The pottery assemblage excavated so far in the nine Iron Age Phases identified in Operation J includes a very limited amount of Cypro-Phoenician imported wares (one fragment of a White Painted III Ware juglet decorated with two triple concentric circles in brown paint, probably from Cyprus, and one body fragment of a Black-on-Red II juglet decorated with three concentric circles and five horizontal lines in black paint, from Cyprus or the Phoenician coast) as well as local ceramics such as Red Slip and Simple Wares. The uncovered pottery assemblage suggests placing the explored phases in the Iron Age II (mid-ninth–eighth centuries B.C.).

Summing up, the archaeological evidence related to the Iron Age collected in Operation J makes it possible to stress the very strong continuity existing in the construction activity, the building materials and techniques, the organisation of space, and its functional utilisation throughout all Iron Age phases. The cemetery of Phase 6 represents the only real break in the functional continuity of the settlement sequence of Operation J. Furthermore, on the portion of the summit of the central mound so far investigated (ca. 150 square metres) only buildings and installations with a domestic and productive function, such as dwellings, service buildings, and open-air areas like courtyards and possibly threshing-floors, existed during the nine phases of the Iron Age II. At least this part of the first millennium settlement, therefore, displayed a private and rural character.

After a settlement hiatus represented by the Iron Age I and the Late Bronze Age an apparently uninterrupted sequence spanning from the Middle to the Early Bronze Age IV is attested to. The Iron Age settlement phases cover an occupation phase (Phase 10) characterised by a very fragmentary architecture. Of particular interest is an outer trodden floor, probably a street, delimited by buildings, whose surface displayed dozens of footprints left on its muddy surface by the sandals of adults and children. Forensic anthropology provides us with methods for the interpretation of shoe prints. A preliminary analysis carried out on the sandal prints of two adults by our anthropologist made it possible to reconstruct the height of these individuals. Individual A was probably a woman with a height varying between 1.50 and 1.63 meters, while the height of individual B varied between 1.56 and 1.69 meters. Sex can not be determined. We expect in the future to be able to ascertain in a quite reliable way the total number of individuals who walked on the street, their height and possibly also their sex. The uncovered pottery and the head of a clay figurine allow us to date this occupation phase to the Middle Bronze Age II.

The underlying Middle and Early Bronze Age IV phases could be investigated until now only in a stratigraphic sounding of 2 x 2 m, where seven phases with architecture, obviously

16. Layard 1853: 198.

still fragmentary, have been brought to light. Due to the limited exposure reached so far the character of the settlement in the different Middle and EBA phases is still unclear.

Operation K¹⁷

Investigation on the northern outcrop aimed at exposing open-area extensive architecture and at clarifying the urban layout in this intermediate area, between the North Gate and the Palace area (Fig. 1). The operation extended over 300 square meters. Five different occupation periods have been identified (modern/sub-recent, Iron Age II, Iron Age I–II, Late Bronze Age). Furthermore, surface finds attest for the first time the Middle and Early Bronze Age IV period.

The few soundings carried out in the 20s had uncovered traces of important buildings¹⁸ and three cuneiform tablets, one of them carrying a forerunner of the *Anuma Anu Enlil*.¹⁹ We excavated one complete large household (Building 1) and part of two further (Buildings 2, 3) where dwelling, weaving, bronze smelting and stone cutting are attested, offering for the first time detailed information on the early Iron Age architecture and layout of the site. Evidence of 2nd millennium structures, on the other hand, confirms the existence of very relevant buildings, as suggest already the epigraphic finds made in the 20s.

Late Bronze Age: Parts of a long and imposing red mud-brick wall dating to the Late Bronze Age I were uncovered. Thickness, construction mode, orientation and date, which allows for a sensible hiatus with the overlaying structures, underline the difference of this cultural horizon from the succeeding Iron Age one.

Iron Age I–II: On top of Late Bronze Age remains, in Phases 8–7 the layout of Building 1 came into being. The complex comprises 4 rooms (A–D). On the eastern wall lay the main and the secondary entrance to the complex. The former is a doorway with raised threshold, richly composed of a long monolith and other large stones. The eastern limit of the complex is a hardened-mud trodden floor, with some incorporated small benches and raised floors—features of a courtyard probably functionally connected to the building. No peculiar use other than dwelling can be proven for these phases, but the finds in the succeeding Phase 6, which displays an overall continuity in the architecture with Phases 8–7, hint at a rather different picture. Building 3 lies south of the Building 1 premises.

In Phase 6 Building 1 witnessed a slight modification in layout. In the southern block, two small rooms (E and G) were added. In Room C, a north-south wall was added adjoining the existing one to reduce the width. A similar one delimited the room to the west. In the northern block a large room (F) was leant onto the west facade. With a 120 square metre surface, Building 1 is composed of 7 rooms. In Room D, a round bench leaning on the northern wall, a fully interred jar, and—near a circular hearth—a carnelian bead and a set of basalt tools were uncovered. At the feet of the small round bench (an altar?) lay the most significant find of the campaign: a painted therio-anthropomorphic pottery vase. The vessel is a cylinder with double swelling on top, painted with red bands. The face is made of an out-stretched reptile head, with round pellet eyes. Clay rolls wound-up along the vessel's body: the left arm bent holding two oval objects (breasts? eggs? children?), the right one straight from the

17. Work on the northern outcrop of the central acropolis system was directed by M. Luciani with the aid of H. Awad, P. Battisti, L. D'Alfonso, L. Fales and C. Yakubi.

18. Du Mesnil du Buisson 1935: 168–173.

19. Bottéro 1950: 105–112.

‘waistline’ to well above the head. Represented in what seems like a human posture, although with turtle likeness, the figure clearly lacks any divine symbol or clear attribute, but it nonetheless probably does represent a domestic-cult object. For its overall appearance this vessel is unique and no close parallels are known.²⁰ In the adjacent and communicating Room C, close to an oven, a large crucible with rests of smelted bronze was found together with basalt bowls and tools and a bone spatula. Furthermore, from the building and its courtyard come shell pendants and a round, black-and-white faience inlay, imitating agate. Starting from this phase then, the uncovered evidence points clearly to the co-existence, along with dwelling and domestic activities in the northern half, to cultic activities and handicrafts such as production of bronze artefacts,²¹ beads and inlays for jewels in the southern rooms of the building.

In Phase 5 (Fig. 5) Building 1 is delimited on the northern side by a 1.6 metres wide street paved with small stones and pottery sherds, edging on the south-western angle of Building 2. In this Phase, Building 1 consists of 9 units and notwithstanding the added rooms, the floor surface increases only by 10%. The northernmost access had been closed by leaning on it a small Room K, the floor of which is almost entirely paved with large stones. In the southern block the small Room G is enlarged into Room J. Room D was divided adding an adjoining wall and a partition, thus obtaining two small Rooms H and I. Notable, in the latter, the presence of a large interred storage jar (28) in the NW corner. Its position is very close to the one in the underlying Phase 6. Therefore, some kind of continuity is evident, though architecture changes considerably. The round bench in D was still visible, the oven with crucible inside C had been interred, but an outdoor pit with the clay coil super structure collapsed in situ, looked like a “slag pit iron-smelting furnace”.²² The inventory in Phase 5 is comparable to the one seen for Phase 6, with basalt tools and unfired clay weights, evidence of food preparation and storage as well as textile weaving. Other elements which lead to think that the bronze smelting and stone cutting were still carried out in this phase are a small bronze rod and a metal slag as well as a carnelian bead.

In the last part of the sequence, Phase 4, the plan is only slightly modified. The inventory displays a typically domestic assemblage with basalt bowls, tripod, and tools, flint, unfired clay weights and bobbins, spindle-whorls. One half-finished bead and one half-polished hematite stone could be products of stone cutter’s. To these must possibly be connected two small spheres, possibly stone weights, and a small baked brick. Its upper face displays three hemispherical indentations. It could represent a mould for small, hemispherical bronze ‘loafs’ to be later worked out into jewels, or, more simply, a weight holder.

Notwithstanding the different reconstructions, one can recognise continuity in function and type of productive activities carried out in Building 1 throughout Phases 8 to 4 and chrono-cultural identity. The pottery dates to the very late IA I—early IA II A period.

Summing up, the dimension and type of architecture brought to light, the presence of installations and finds that point to activities related to storage, food and textile preparation, as well as metal craft and stone cutting within a single architectonic context (Building 1), suggest that this Iron Age household was a large unit where dwelling, domestic-cultic and

20. Typologically the most evocative, though not really similar, is the red painted bottle from the Tell Qasile, 11th cent. B.C. sanctuary (Mazar 1980: 79, Fig. 18).

21. An Iron Age (III) building where metallurgy is attested with other functions is also in Operation G at Tell Shiukh Fawqani. Luciani n.d.

22. Craddock 1995: 263, Fig. 7.11.

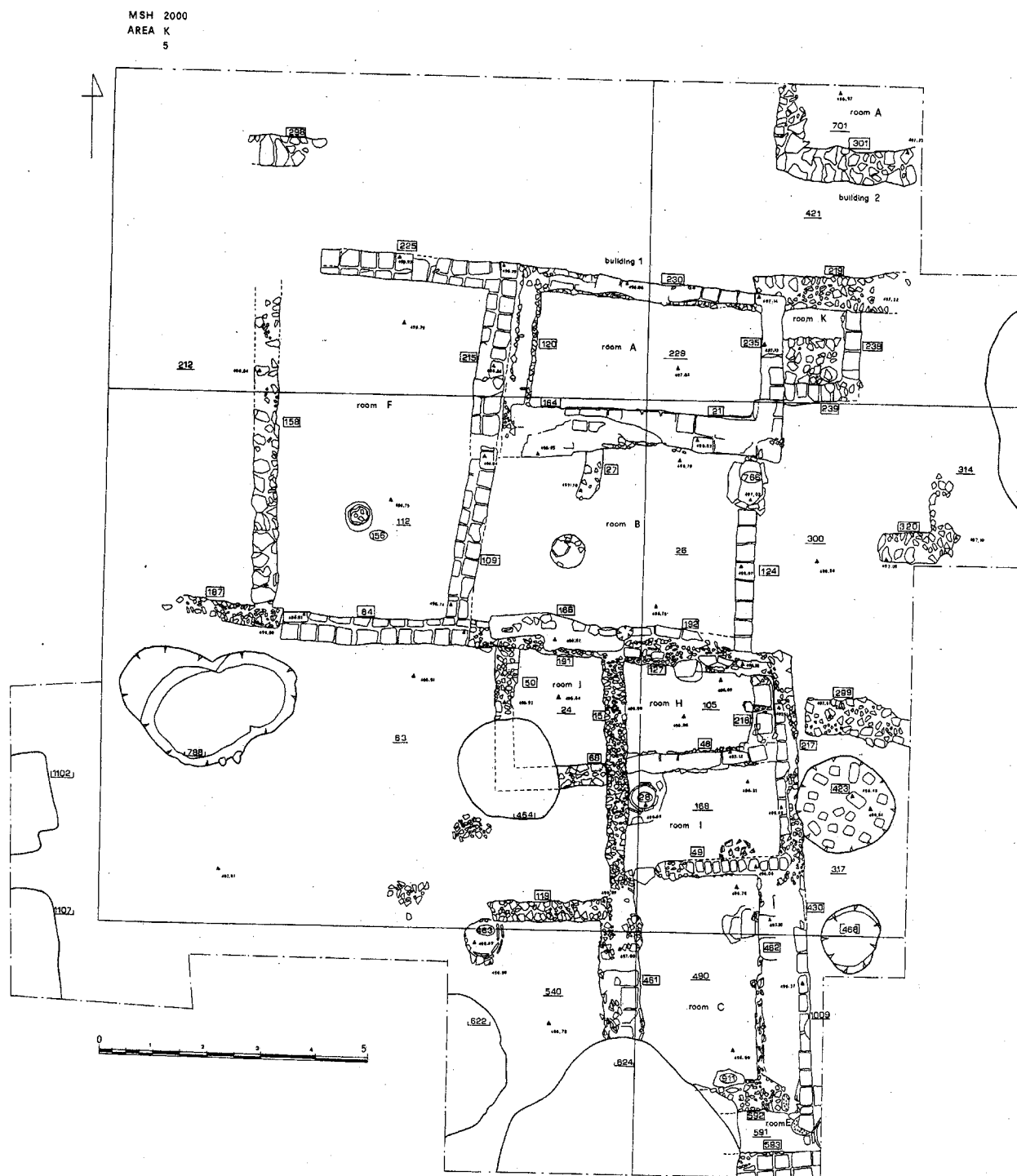


FIGURE 5. Plan of Buildings 1 and 2, Phase 5, Operation K.

productive activities were carried out jointly, rather than in separated and specialised areas of the site. It is not yet known whether this pattern applies to the whole site in this early phase of the Iron Age period.

Iron Age II: The overlying Phases 3–2 are to be attributed exclusively to a rural occupation: only faint traces of buildings and huge pits have been recovered, displaying a notable change in use of the area.²³

Geomorphology²⁴

The 1999 campaign featured also a geomorphologic survey of Tall Mishrife and its next surroundings aiming at reconstructing the ancient environment of Qatna and its evolution from the Middle Pleistocene to the Holocene. Geomorphologic work focused on the site and the natural and cultural processes that lead to its formation. In particular, the main goal of the investigation was to understand the provenance of the materials used to build the impressive square ramparts girdling the ancient city and made up by soil, gravel, crushed limestone, and peat, the building techniques of this huge fortification system, and the changes induced in the ancient landscape and environment by its construction.

Prior to the construction of the city its area was occupied by two Pleistocene river terraces gently sloping to the north and separated by two confluent water streams flowing into the Orontes. The eastern terrace was modelled and used as a base for the eastern rampart by removing material to the east and west of the latter. The “Mound of Loth”, a little and isolated out-crop in the south-eastern part of the site is probably a surviving edge of the ancient terrace. The natural core, spared by the great excavation works that accompanied the construction of the city, subsequently grew in elevation due to the accumulation of archaeological layers. The excavation of the material necessary for the construction of the ramparts determined the formation of a wide and shallow ditch running parallel to the perimeter of the ramparts. Geomorphologic research clearly shows that water never flowed in the ditch.

On the western terrace, which was modified and shaped both by the two water streams delimiting it to the east and west and by human intervention, the buildings of the acropolis were established.

Concluding, geomorphologic investigation stresses that the modification of the natural morphology of the landscape in the area chosen for the construction of the ancient city of Qatna and the building of the ramparts, the city gates, and the public buildings required the preliminary accomplishment of impressive excavation and earth movement works. Future research will allow us to better understand the nature, dynamics, and size of these public works as well as the formation and modification processes that shaped the palaeoenvironment of Qatna and its region.

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Excavations at Wadi Mataha: A Multi-component Epipalaeolithic Site in Southern Jordan

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Abstract

Archaeological research at Wadi Mataha in the Petra Basin of southern Jordan found multiple Epipalaeolithic occupations ranging from pre-Natufian to Early and Late Natufian. Excavations in the Early Natufian component revealed stone masonry and portable art; the Late Natufian area yielded a roasting feature, use area, and several bedrock mortars. Limited excavations in pre-Natufian deposits found the remains of two individuals, although the modest samples have precluded a clear definition of that occupation. Radiocarbon dates on faunal bone range from $14,140 \pm 130$ BP for the pre-Natufian to $11,200 \pm 50$ BP for the Late Natufian.

Introduction

This paper reports on the second field season of archaeological excavations at Wadi Mataha, an Epipaleolithic site in southern Jordan (Fig. 1). The 1999 season defined an Early Natufian masonry feature, revealed a large roasting pit and probable use area assigned to the Late Natufian, uncovered a multiple burial dating to a pre-Natufian occupation, and confirmed the presence of down slope features associated with the Early Natufian occupation. The site had been briefly tested in 1997 by Janetski who found evidence of multiple occupations dating from the Middle Epipaleolithic to the Late Natufian. The research was done as an archaeological field school for Brigham Young University directed by Joel C. Janetski, joined by project co-director Michael Chazan of the University of Toronto.

Site Description

Wadi Mataha is a multi-component, Epipaleolithic site in the northern portion of the Petra Basin (Fig. 2). Human occupation lies at the top of and down a steep talus slope at the south edge of Maghur al Mataha, a large sandstone monolith. Elevation is about 950 m. The landscape is rough, broken terrain intermediate between the city of Petra and gentler, hilly uplands which still contain some vestiges of oak-pistachio woodlands. The site slope is littered with sandstone rubble, chipped stone debris and tools, and occasional bone eroding into a secondary drainage of the site's namesake, Wadi Mataha, an important drainage flowing into Petra only 1.2 km to the south. The size of the artifact scatter is about 1100 m^2 . Initial estimates of site size were modest given the possibility that cultural material may have simply eroded down slope; however, the 1999 work has demonstrated that features and buried deposits are present in Test Area 3, which is well down the slope. Several Nabataean water control features are cut into the sandstone escarpment and occasional Nabataean sherds

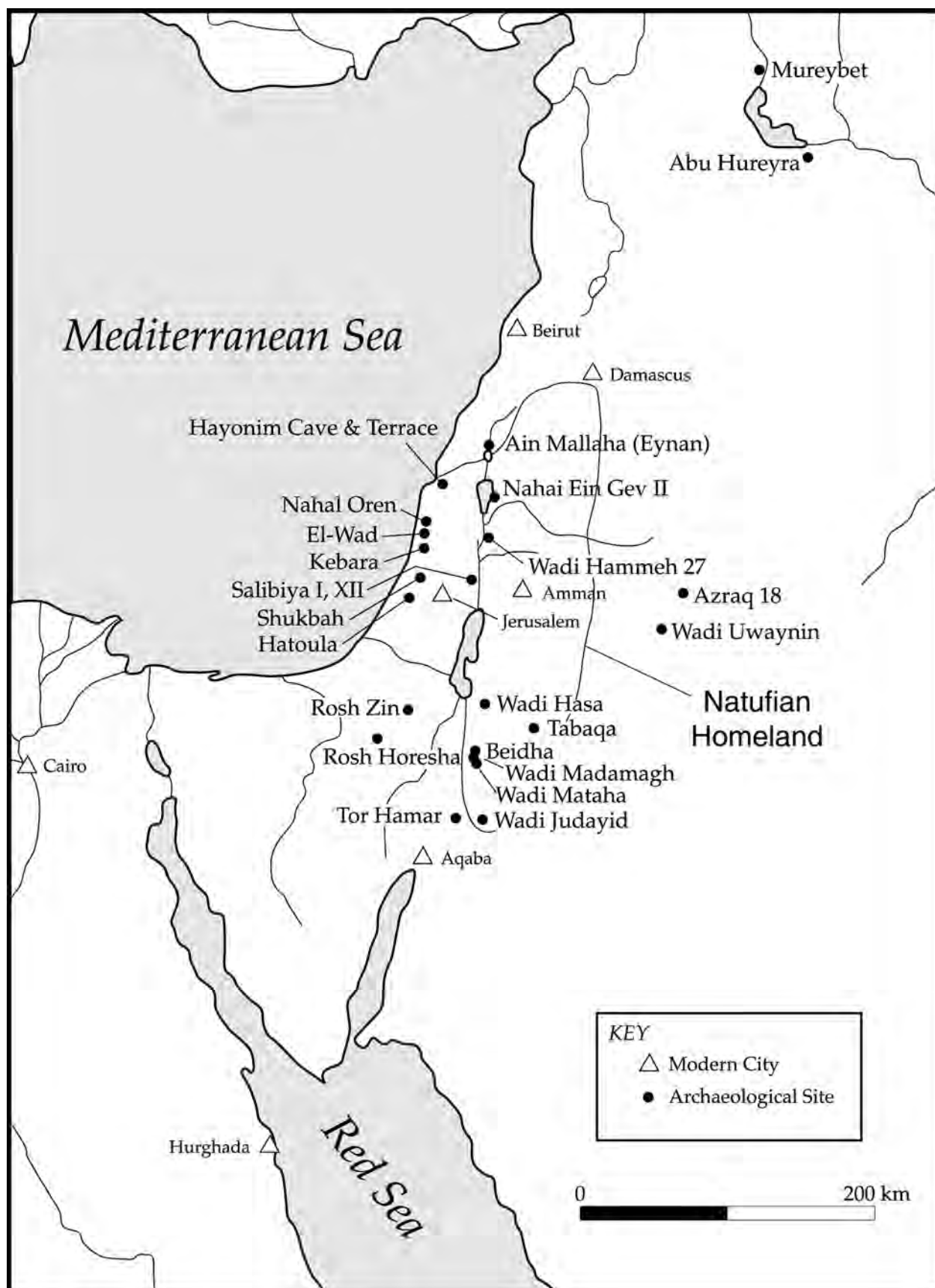


FIGURE 1. The Near East showing the locations of selected Epipaleolithic sites.

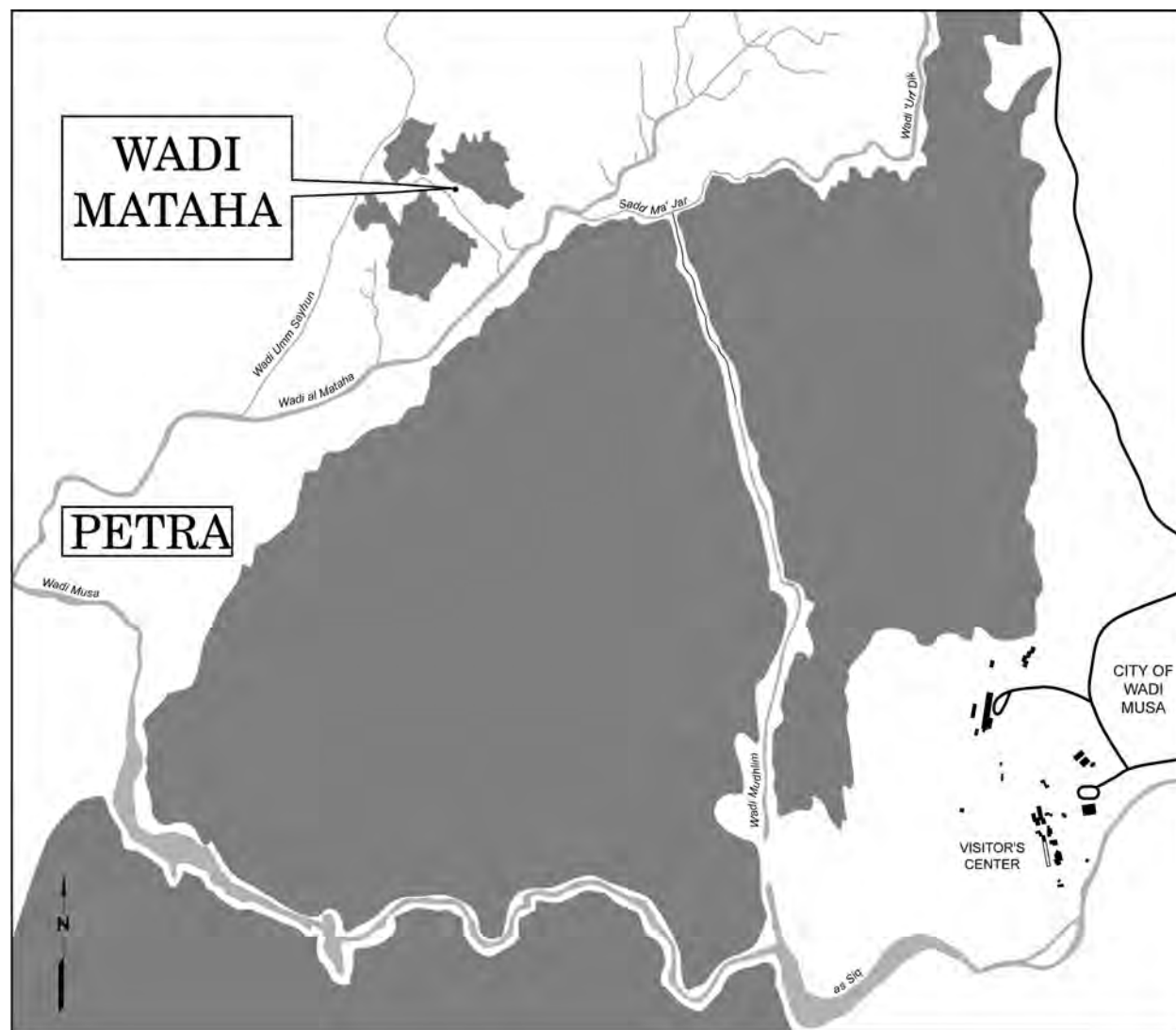


FIGURE 2. Map of the Petra Basin in southern Jordan showing the location of Wadi Mataha.

are present on the site surface. Several bedrock mortars are present on a sandstone ledge at the base of the escarpment.

Excavations consisted of three tests: Test Area 1 in mid-slope, Test Area 2 on the upper slope, and Test Area 3 on the lower slope (Fig. 3).

Test Area 1

This area in mid-slope contains Early Natufian material associated with a semicircular masonry wall standing up to four courses high (Fig. 4). The 1999 work excavated 11 square meters to clarify the nature of the structure. Lithic material was uniformly Early Natufian, i.e., lunates with bifacial Helwan retouch. Faunal remains were poorly preserved compared to the upper slope (Test Area 2). No floor features were found, but a fragment of a basalt shaft straightener with incised geometric decoration and an intriguing carved siltstone artifact were uncovered at floor level.

The shaft smoother is a finely crafted tool made of basalt but broken in half. A highly polished, V-shaped groove is present on the dorsal portion while the ventral side is slightly

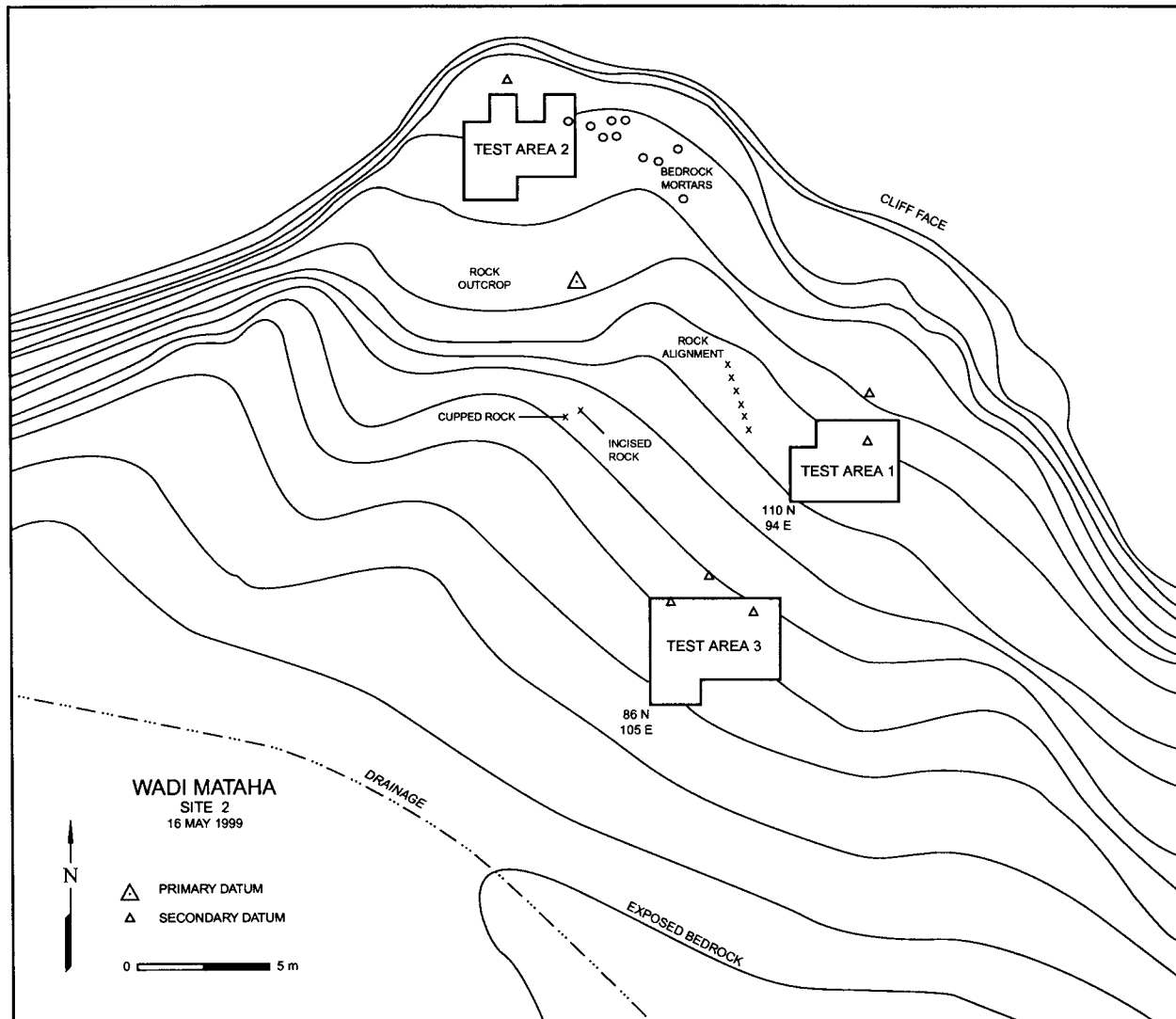


FIGURE 3. Contour map of the Epipaleolithic occupation at Wadi Mataha showing locations of Test Excavations.

convex and smoothed (Fig. 5). The perimeter of the tool is decorated with U-shaped motifs resembling those on tools from Wadi Hammeh and Mallaha (e.g., Bar-Yosef and Belfer-Cohen 1998).

The carved item is functionally enigmatic. Made from a fine, pinkish tan siltstone(?) and measuring ca. 3.5 cm long and 1.9 cm wide, this artifact resembles a corner-notched projectile point with the distal portion missing (Fig. 6). However, it was made by grinding and incising. On one side are a series of short, fine lines incised horizontally and a single vertical line making simple geometric patterns. Incised stones are known from Natufian contexts to the north (e.g., Hayonim Cave) and are thought by some to represent notational inscriptions (Bar-Yosef and Belfer Cohen 1999: 408, Marshack 1997).

Test Area 3

Seventeen square meters were opened here to determine whether the lower slope had been occupied. Excavations revealed a yellow brown sediment and rubble fill across the



FIGURE 4. Photo of masonry wall partially excavated in Test Area 1. Note coursed stone arching across the up-slope portion of the wall.

entire area with Early Natufian material embedded. Lithics are similar to those from Test Area 1; i.e., lunates with bifacial Helwan retouch. Three pit features containing ashy sediments, lithics, and faunal bones document the use of the lower slope during at least the Early Natufian.

Test Area 2

Test Area 2 lies on the upper slope of the site. In contrast to Test Areas 1 and 3, no distinct Early Natufian occupation has been found in this area; however, both Late Natufian and Middle Epipaleolithic materials are present. Several bedrock mortars are present on a sandstone bedrock shelf abutting the east edge of the excavated area (Fig. 7). Late Natufian levels are characterized by dark, middeny sediments containing small steeply backed lunates with bipolar retouch and crude notches and denticulates. On the eastern edge of the excavations, sediments appear to have been disturbed by colluvial debris deriving from the cliff above. This activity eroded a channel into the midden depositing sandstone cobbles and red, sandy sediments and mixing a rich Late Natufian bone and lithic assemblage with some Nabatean pottery and modern debris.

Late Natufian features include a roasting area with dark midden and abundant small cobbles. Stratigraphically below (but still Late Natufian) and slightly downslope from the roasting feature was a patchy surface of flat stones upon which lay several *C. ibex* horn cores and domestic items including pestles and chipped stone tools (Fig. 8). The surface appears circumscribed by an arching alignment of sandstone boulders.



FIGURE 5. Basalt shaft smoother from floor zone of masonry structure. U-shaped decorations and groove are clearly visible.



FIGURE 6. Unique carved siltstone artifact from floor zone of masonry structure.

This surface also seals underlying Middle Epipaleolithic deposits. Lithics from this lower level are characterized by the absence of lunates and a high frequency of steeply backed, pointed bladelets, with frequent use of the microburin technique. The raw material from the Middle Epipaleolithic level is extremely diverse and is dominated by non-local materials in sharp contrast to both Early and Late Natufian assemblages.

A burial consisting of two individuals—a complete, articulated adult buried face down with the lower legs tightly flexed over the upper legs, and the fragmentary remains of an infant lying adjacent to but slightly above and to the east of the adult—were excavated in the Middle Paleolithic level. Associated with the adult burial were a large blade of non local chert and a breached stone bowl with a crudely finished base. The stratigraphic placement and associated chipped diagnostic stones argue that these burials are pre-Natufian in age. However, it is also possible that the burial is an intrusion from the overlying Natufian. Attempts to date the skeleton are ongoing.

Dating

Absolute dates have been difficult to obtain at Wadi Mataha as charcoal has been non-existent and bone collagen is present in only very minute quantities. The scarcity of col-

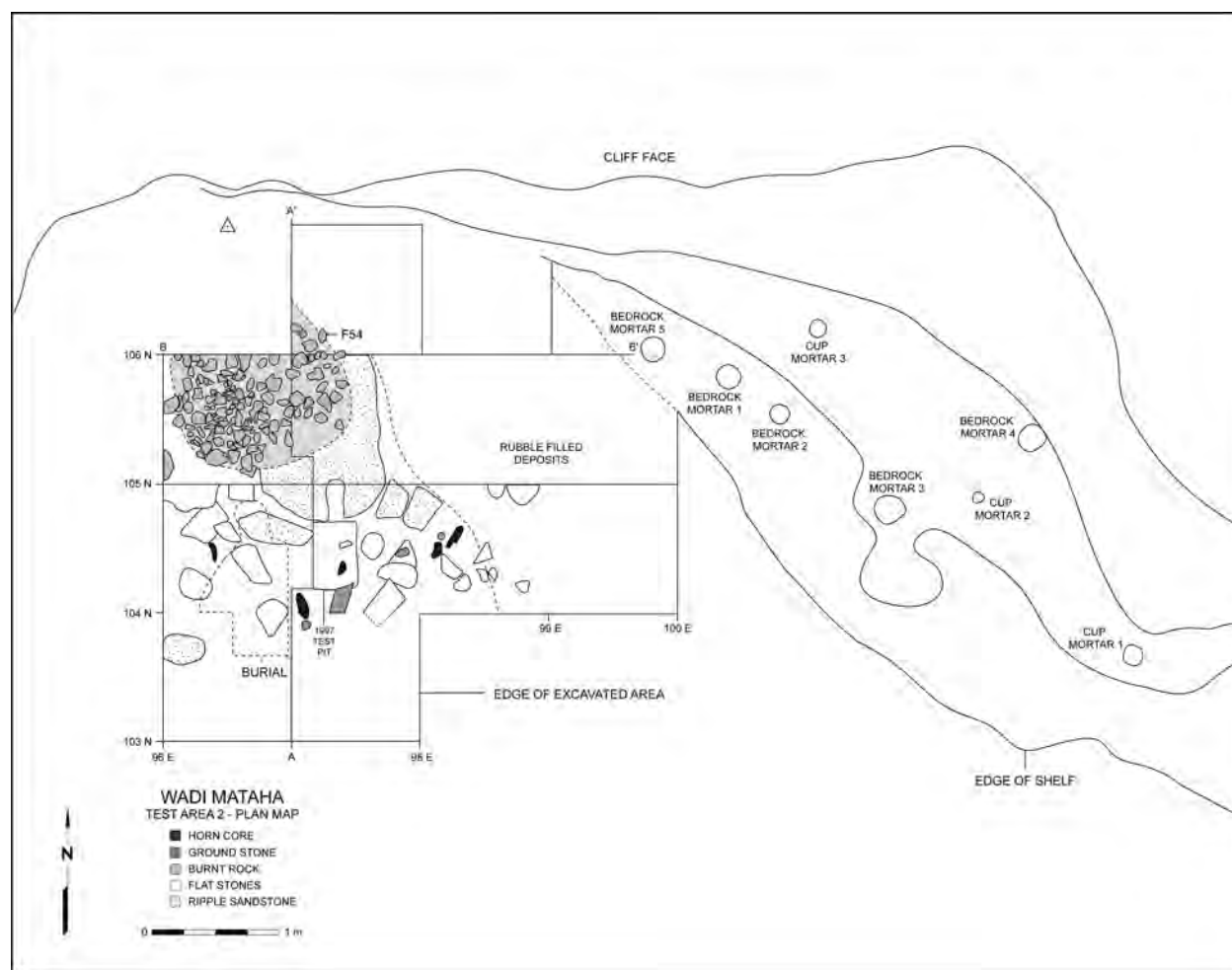


FIGURE 7. Detail map of Test Area 2 showing bedrock mortars on the east, roasting pit, horn cores associated with flat lying stones, and location of burial beneath the stones.

lagen is attributed to the well-drained sandy sediments that tend to leach collagen from bone (Skye Sellers, Stafford Labs, personal communication 2000). However, two AMS radiocarbon dates on humic acids from burned animal bone recovered from Test Area 2 place the pre-Natufian occupation at $14,500 \pm 130$ and the Late Natufian at $11,200 \pm 50$ radio carbon years BP. The second, later date was stratigraphically above the earlier date and is associated with steeply backed lunates. Both dates were from burned bone processed by Stafford Labs.

Marine Shell

Analysis of the marine shell recovered during the 1999 season is still in process, although preliminary work suggests that marine shell is present in all areas and in all components. *Dentalium* spp. appear to be the most abundant type recovered and include both smooth and ribbed taxa such as *Dentalium vulgare*, *Dentalium dentale* or *D. Octangulatum*, and *D. elephantinum* (Abbot and Dance 1982: 283). The latter are reported from the Natufian levels at Beidha as well (Reese 1991: 619). These beads vary in length from just under 5 mm to nearly 20 mm in length and many exhibit polish from use as beads. Other shells present include

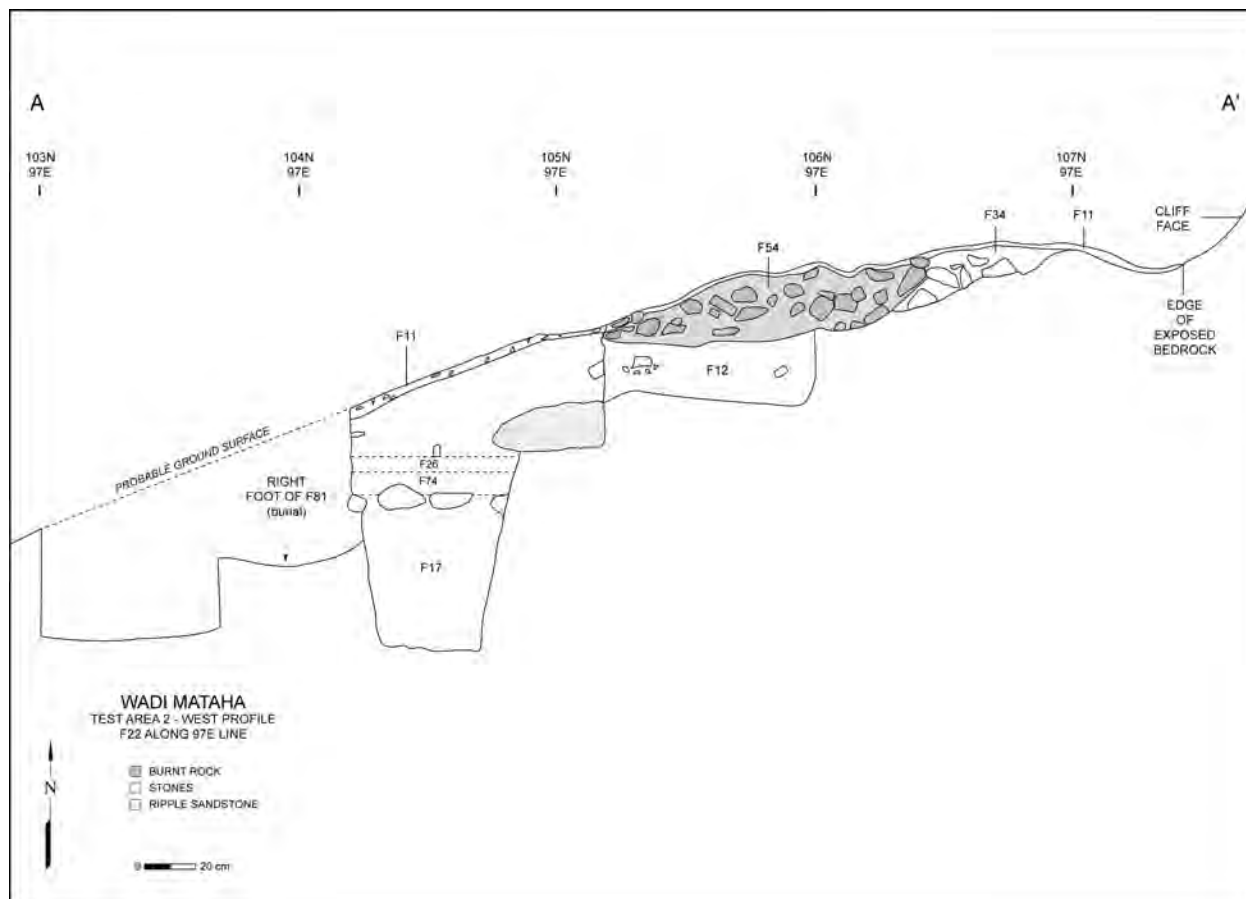


FIGURE 8. Profile of Test Area 2 along A-A' line showing stratigraphic and spatial relationship of roasting area, flat stones, and burial.

worm or tube shell (cf. *Vermitedae*), at least two species of *Nerita* spp., *Olivella*, *Cypraea* sp., a number of small marine gastropods as yet unidentified, and fragments representing at least four bivalve taxa. Many of the *Nerites* and gastropods are perforated through the whorl suggesting use as beads.

Several shell disk beads and a pendant were recovered. The disk beads, about half of which are dark gray in color, presumably from burning, average ca. 6.0 mm in diameter and 1.5 mm thick and appear to have been made from gastropod whorls. The pendant (ca. 2 cm long and just under 1 cm wide) was made from a bivalve with a lustrous finish.

The primary source of the shell is likely the Red Sea to the south given that *Nerita* shells do not occur in the Mediterranean and *D. elephantinum* is from the Red Sea as well (Reese 1991: 613).

Faunal Remains

Animal bones recovered during the 1997 test were analyzed and presented at the 1998 ASWAA conference by Whitcher et al. (1998). The faunal material collected in 1999 have been analyzed and a preliminary report made by Baadsgaard et al. (2000). Those findings are briefly summarized here.

The faunal assemblage consists of over 18,000 bones, about 7 percent of which is identifiable to a taxonomic level such as family. Many of the typical desert/steppe species are

present in all occupations and taxa tend to be split about evenly between caprines and gazelles (52 percent of NISP) and small animals (44 %). Caprines are dominant (34 percent of the total NISP), followed by gazelle (18 %), and a few bones from aurochs and equids, most likely *Equus africanus*. Five bones were tentatively identified as sheep (*Ovis* sp.). Immature animals are slightly more common in the caprine assemblage (32 % of the caprines) than in the gazelles (29 %) based on epiphyseal fusion of long bones (following Davis 1980: 133).

Land tortoises (*Testudo graeca*) (23 %) were the most common small animal present, followed by hare (*Lepus* sp.) (2.6 %). Twelve percent of the tortoise shell fragments are burned and two show cone fractures in the center suggesting the means whereby the shell was removed. Chukar partridge (*Alectoris* sp.) (5.8 % of total NISP) was the most common bird in the assemblage, although the analysis found a variety of raptors as well. Chukar elements are dominated by pectoral and limb bones, while the raptors are represented mostly by foot bones. A similar pattern in raptor elements was noted at Salibiya I, a Late Natufian site in the lower Jordan Valley and at a number of PPNA sites (Tchernov 1993). This contrasting pattern suggests chukars were being captured for food, while raptors were sought after to collect talons to be used as ornaments.

Carnivore bones were mostly attributable to fox (*Vulpes* sp) (1.2 %) and dog (0.4 %) although both cat and polecate were also present. As with the raptors, the most common fox elements are foot bones and could suggest hunting these animals for pelts.

Although gazelles dominate the faunal assemblages of Natufian sites located in forest and coastal areas, the caprine dominated assemblage at Wadi Mataha resembles the large mammal component from the semi-arid steppe east of the Dead Sea, such as Beidha and Wadi Judayid 2, where both caprines and equids occur with greater frequency (see summary in Byrd 1990: 176). Other species favoring more wooded areas such as deer, wild boar, as well as waterfowl are extremely rare or absent from these sites.

Temporal shifts in taxa are notable in both the large and small taxa. Most important is an increase in caprines from pre-Natufian to Early Natufian with a slight decline in the percentage of goat in the Late Natufian. Gazelles steadily decrease relative to goat through time. The small taxa show a drop in the relative proportions of tortoise through time, although it remains always the most abundant. Birds show a persistent increase from early to late, hares increase in the Early Natufian and drop off somewhat in the Late Natufian. The large mammal assemblage resembles that found at Beidha (Hecker 1975). There are some concerns in these comparisons as density mediated attrition may be playing a role; however, some attempt was made to compensate for that possibility (Baadsgaard et al. 2000).

Discussion

The importance of the Wadi Mataha materials are several. In general, the research has documented architectural features, site facilities (mortars), portable art and ornaments, and a rich midden containing diverse assemblage of chipped stone, faunal remains, and marine shell in southern Jordan where such elements have heretofore been rare or unknown for the Natufian period. The investment in site facilities during the Early and Late Natufian suggests a shift toward diminished residential mobility.

More specifically, the archaeofauna builds on the work at Beidha and provides a stronger argument for the growing importance of caprines relative to gazelles during the Middle Paleolithic, a pattern in contrast with that seen to the north (various, but see Bar-Yosef and Meadow 1995). In addition, the abundance of small animals in the assemblage along with

grinding facilities suggesting the importance of plant foods combine to argue for increasing intensification of dietary resources during the Epipalaeolithic. Finally, the faunal data provide tentative support of recent predictions and observations made by Stiner et al. (2000) for long term trends in animal exploitation during the Upper Paleolithic in the Near East and Mediterranean regions.

The intense use of the site during the Late Natufian is particularly important given the co-occurrence of the period with the climatic stresses of the Younger Dryas and which is seen as causative in the development of the Neolithic (Bar-Yosef 1998). The 11,200 BP date for the Late Natufian occupation is very close to the onset of the Younger Dryas at ca. 11,000 BP.

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Preliminary Report on the Third and Fourth Seasons of Excavations of the Italian-Palestinian Expedition at Tell es-Sultan/Jericho, 1999 and 2000

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Abstract

The main results of the two last campaigns of the joint Expedition of the Palestinian Department of Antiquities and the University of Rome "La Sapienza" at Tell es-Sultan, ancient Jericho, concern thus far the seriation of material culture and the urban topography of the site mainly during Early Bronze III (in Areas L, F, G and B) and Middle Bronze I–III (Areas E and A). The restoration project for the site has also been carried on in view of the creation of a National Archaeological Park.

Introduction

The third and fourth seasons of excavations of the Italian-Palestinian Expedition at Tell es-Sultan/Jericho took place in October–November 1999 and September–October 2000 under the auspices of the Department of Antiquities of the National Authority of Palestine, Rome University "La Sapienza", and the Italian Ministries of Foreign Affairs and of the University and Scientific and Technological Research.² In October 2000 the work of the Expedition was interrupted due to the severe political situation under the pressure of Israeli military occupation.

In the framework of the main goal of the Expedition, which is the investigation of the urban topography of the Early and Middle Bronze Age town, the aims of the 1999 and 2000 seasons were to prosecute the excavations of Areas F, B, A and E, while two other new areas were opened on the ground: in Area G it was intended to check the stratigraphy of earlier

1. Sezione Vicino Oriente of the Dipartimento di Scienze Storiche, Archeologiche e Antropologiche dell'Antichità–Rome University "La Sapienza"; Palestinian Department of Antiquities. N. Marchetti has written the account of Areas G, A and E, L. Nigro of Areas L, F, B and H, and H. Taha the Introduction and the Conclusions.
2. The Expedition is directed by Nicolò Marchetti and Lorenzo Nigro, with the coordination of Paolo Matthiae, and by Hamdan Taha, with the field direction of Jihad Yasin. To the 1999–2000 seasons, in addition to the directors, have participated archaeologists B. Panciroli, E. Ascalone (1999), A. Lisella, S. Antonetti, A. Colonnelli, E. Ferrazza (1999), A. Di Ludovico (2000), A. Bontempo (2000), M. Ghayada, Kh. Khanfar, W. Hamamreh (1999), M. Sikh (1999), N. Barakat (1999), S. Tawafsha (1999), M. Moqbel (2000; also serving as field archaeozoologist), F. Aqel (2000); architects F. Nigro and N. Abu Jdey (1999), draughtsmen L. Di Blasi, E. Cirelli (1999), M. Forgia (2000) and I. Iqteit (1999), conservators S. Ferrari, E. Spagnoli and M. Diyab (1999).

excavations on the “*Quellhügel*/Spring Hill”, while in Area H to check the extension of the Byzantine settlement visible on the surface; furthermore, a square to the north (Area L) was investigated to extend the excavation of the settlement adjoining third millennium city walls (Fig. 1). The valorization of the site was also continued through restorations and realization of tourist facilities on the tell. The preliminary results are illustrated in chronological order.

Area L

A new excavation area was opened in the north-east corner of the city with the aim of clarifying the urban plan of the northern part of the ancient town of Tell es-Sultan during the Early Bronze Age. This task seemed in fact reasonably achievable, due to the important topographic data made available by excavations in Area F. A direct stratigraphic and horizontal link with Period IIIc city-walls was indeed necessary to integrate data recorded by previous expeditions.³

A single square has been cleared (BdII3), against the inner face of the main fortification wall, with the stone foundation of its later reconstruction emerging on the ground. This allowed us to plot a general plan of the northern sector of Tell es-Sultan during Period IIIc (EB III, 2600–2300 B.C.), and in the same time also the North-East Tower is cleared.

Area F

In Area F, the second (1999) and third (2000) campaign provided important information concerning the dwelling quarter in the northern part of the EB III town (Nigro 2000: 198–204; Marchetti and Nigro 2000: 15–120), and allowed us to investigate the stratigraphy of the houses during late Period IIIb-c (late EB II–III, 2750–2300 B.C.). In 1999 five domestic units (L.403–L.405, L.323, L.319, L.444, L.445) in a fairly good state of preservation were brought to light (Fig. 2). In 2000 one more unit (L.904) was excavated north of L.445, with an entrance opening towards street L.437 (Fig. 3). This doorway (L.902) had a raised threshold paved with three stone slabs. A further stretch of W.429 (i.e., the wall made of three or more courses of fieldstones which bounds the street to the east) was brought to light to the north, thus showing that the street slightly turns towards the north-east.⁴ The sounding also made clear that the street was in use during the entire urban period with roughly the same outline.

3. The area immediately north and west of Square BdII3 was excavated by the German expedition (Sellin, Watzinger 1913: 36–38, Fig. 17, Pls. 8, II); J. Garstang enlarged to the east the explored area digging a huge trench (“*k*”) down to the Neolithic layers (Garstang et al. 1935: Pl. XXIII; Garstang et al. 1936: 152–154, Pl. XXIV; Garstang and Garstang 1948: 82, Pl. VI), while K. M. Kenyon explored EB layers in Squares E III/IV just south of Garstang’s trench *k* (Kenyon 1981: 309–310, Pls. 322a-b); in the preliminary publication of such stratigraphic sequence J. B. Hennessy (1967: 6–7) identified seventeen phases (Q-A) of Early Bronze Age layers.
4. Street L.437+L.307 was already excavated by Sellin, Garstang and, partly, Kenyon (Marchetti and Nigro 2000: 22–24, Figs. 1: 17–18). The street apparently sloped down to the elevation of ‘Ain es-Sultan. Actually, the eastern limit of the city to the north-east is uncertain; Garstang identified a hypothetical corner of the Inner City-B Wall and a north-south wall not far from it at elevation 9.3 m (Garstang 1935: 150); this structure was interpreted by Kenyon a terrace wall (), one of the main features discovered in Squares EIII–IV (Kenyon 1981:).

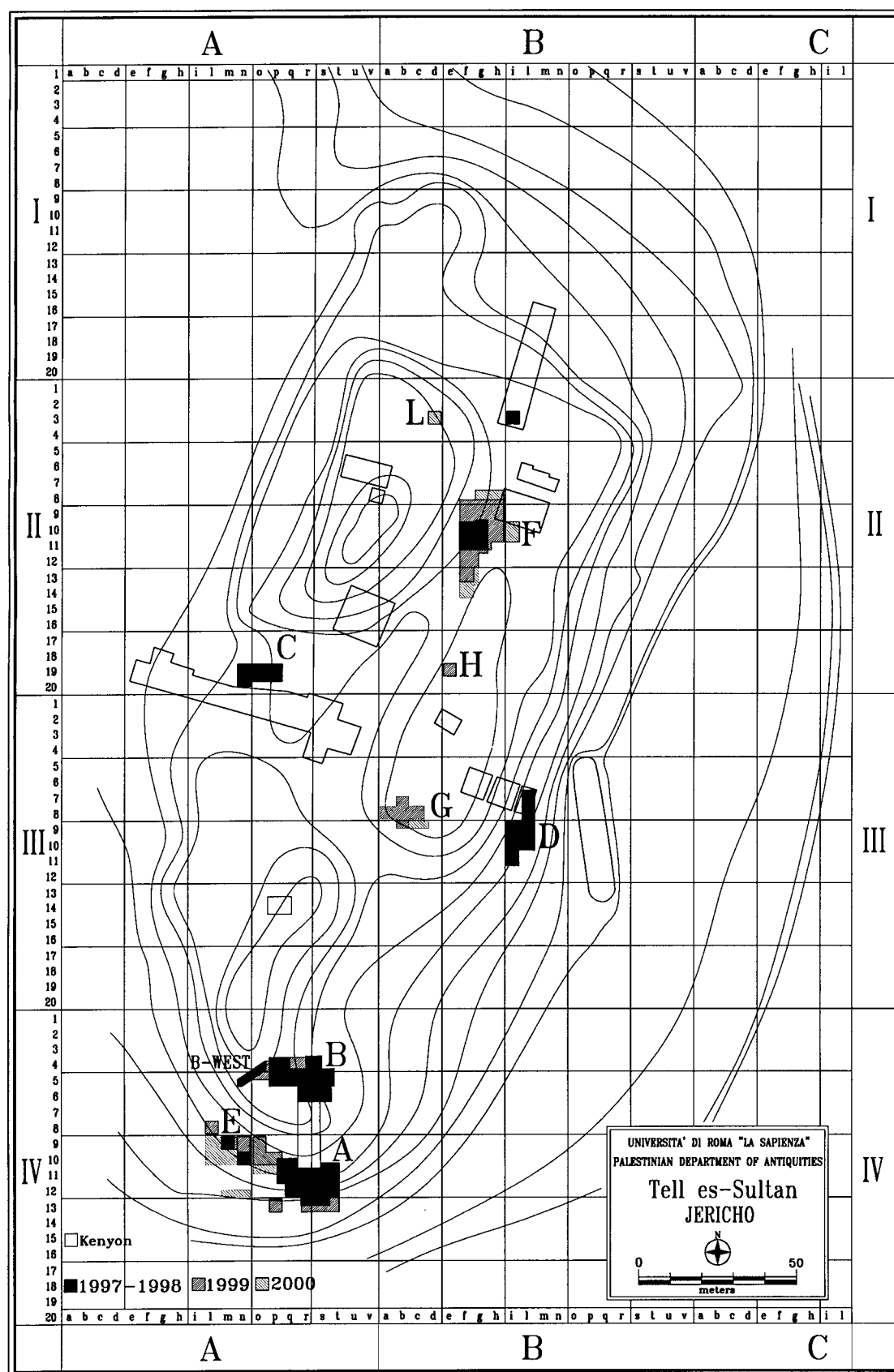


FIGURE 1. Plan of Tell es-Sultan with excavation areas.

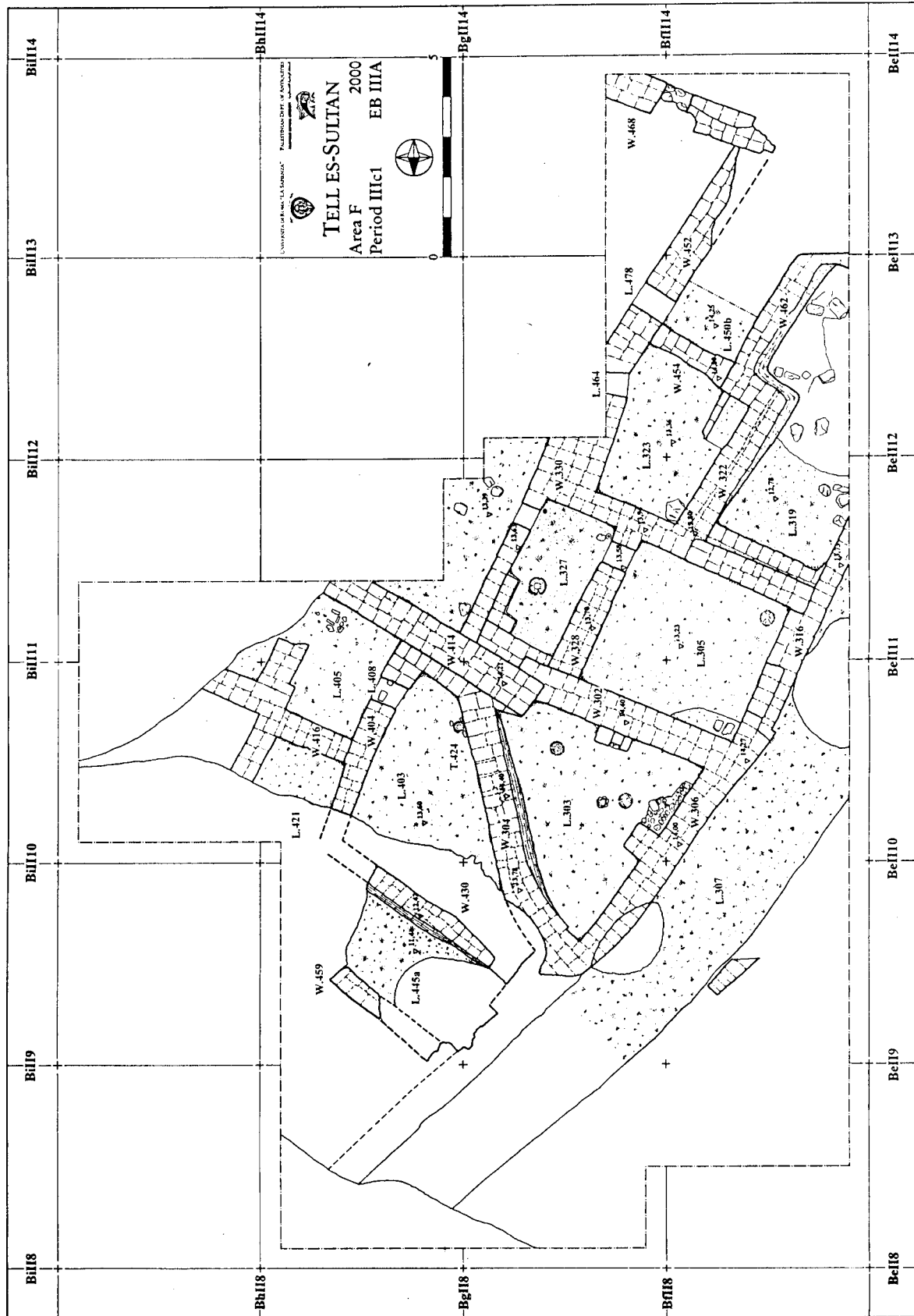


FIGURE 2. Detailed plan of Area F, late Period IIIc1, late EB IIIA, ca. 2500–2450 B.C.



FIGURE 3. Area F, street L.307 in foreground, street L.407 in background and adjacent houses (Early Bronze IIIA, ca. 2600–2450 B.C.), from south-west.

The uppermost layer identified in Area F is the filling of a huge Byzantine refuse pit, to be related with the Period IX rural settlement, identified in 1999 on top of the “Spring Hill” (Area H) and surveyed in 2000. The pit cut a stone foundation (W.431), belonging to a MB I building (a doorway and a drain through the wall were also preserved), supported by a massive terrace wall (W.420 + 407),⁵ showing the same orientation of the preceding EB street, and dated by the pottery found in its foundation trench to the beginning of Period IVa (MB I, 2000–1800 B.C.). The terrace wall cut a house (L.419), which dates back from Period IIIc2 (EB IIIB, 2450–2300 B.C.), thus representing the latest phase of the EB dwelling quarter so far identified.⁶ At the opposite north side of the Area (BhII8) is located the lowest layer so far excavated (floor L.455c), against W.458, a structure which proved to have been

5. Wall W.420 may be related with a similar retaining structure on the east side of the “Spring Hill”, which was excavated by Garstang at the edge of his “Palace Area” (see note 11): these MBA structures were later completely obliterated by Iron Age and Byzantine building activities (the rural village of Period IX was built over the north summit of the “Spring Hill”). In BfII14, i.e., the southernmost square of Area F, excavated in 2000, the Period IVa layers are destroyed by a Byzantine refuse pit.
6. Sparse remains of a Period IIIId occupation were also found in BfII9–11 (Marchetti and Nigro 2000: 18, Figs. 1: 12, 19–22, 1: 13–14), confirming the presence of an EB IV village (Nigro 1999: 48–52).



FIGURE 4. Area F, sounding in L.303, showing collapse layer of the earliest building phase (EB IIIA, ca. 2600–2450 B.C.), from north-west.

built in the last phase of Period IIIb (EB II, ca. 2700–2600 B.C.).⁷ The entire stratigraphic sequence obtained within the houses covers a time span from EB II (2900–2600 B.C.) to EB IIIB (2450–2300 B.C.), showing a conspicuous structural continuity (with many rebuildings), even though the majority of the houses uncovered belong to Period IIIc1 (EB IIIA, 2600–2450 B.C.). Two main building phases were distinguished within Period IIIc1 (Fig. 4), the earliest one lying directly upon the structures of late Period IIIb (late EB II). A large amount of stratified pottery provided a sound comparative material for the chronological setting and functional studies of the houses, including specialized productions such as Khirbet Kerak Ware, Red Polished Ware and some specimens of Light Faced Painted Ware. Each house was provided with a hearth and various working installations, such as benches, cutting and grinding slabs, and pulping holes. Architectural devices and finds, among

7. Wall 458 was already excavated by Kenyon and attributed to Squares E III/IV-phase B (Kenyon 1981: 337, Pl.319b, Wall ZCP); however, it is actually the reconstruction of a major wall (ZBT) built during EB II, attributed by Kenyon to phase E, but possibly belonging also to the earlier phases (H-I) of this period (Kenyon 1981: 332–333, Pls. 317–318a). A direct examination of the stratigraphy (especially the west section of Square E III, which was still visible at the beginning of Italian-Palestinian excavations: Kenyon 1981: Pl. 322b) suggests in fact to ascribe Wall ZCP to phases D-B (roughly corresponding to EB IIIA), and ZBT to phases H-E (EB II).

which flint blades and sickles, loom weights, spindle whorls, stone pestles, grinding stones, pierced sea-shells, worked bones, bone and copper pins, butchered animal bones, give important insight into the material culture of the inhabitants of Jericho around the mid 3rd millennium B.C.

Areas B and B West

In Area B, the complete restoration of Building B1 has been carried out, together with the excavation of another room (L.539), continuing the southern array of rectangular rooms to the west and proving that Building B1 occupied all the area within the inner corner of Period IIIc city-walls (Marchetti and Nigro 1998: 23–80, Fig. 1: 1; Marchetti and Nigro 2000: 121–163; Nigro 2000: 204–207). Even if, due to erosion and previous excavations, only a small portion of the floor of this room was preserved, finds suggest that it also was devoted to food production, as like as L.38 and L.39 excavated in 1997–1998.

The plan (Fig. 5), the thickness of the wall and the building technique suggest that Building B1 was a public building erected against the defensive line of the town, housing productive activities.

A further addition to the excavation in this area was the cleaning of the SE section Area B West,⁸ where a thick layer of *hawwara* was identified as the filling between the Inner (W.2 + W.1) and Outer (W.56 + W.51) city-wall (Fig. 6). This stratum, which had been previously interpreted by Kenyon as ash (e.g., in the west section of Trench III: Kenyon 1981: pl. 273, phase lxxiv–lxxv), proved to be an intentional filling aiming at strengthening the massive defensive structure, which was divided into blind rooms (a kind of casemates). This suggests that the double line of city-walls formed a single fortification with an overall width of ca. 15 m. The discovery allows to re-evaluate the entire fortification system of this period on the southern side of the tell (Nigro 2000: 208).

An early Byzantine installation lying to the east of Area B on the flank of the main touristic path on the site has been re-excavated (it was already brought to light by the German expedition in 1909) and restored.⁹

Area G

The three previous expeditions at Tell es-Sultan have all worked on the “Spring Hill” in the area overlooking the spring of ‘Ain es-Sultan. The main results consisted in the excavation of the longest MBA sequence available at the site in Squares HII–III–VI, of large MB III residential quarters, of LBA buildings (the so-called Middle Building and a house to the north-east) and an Iron II public building (the so-called *Hilani*).¹⁰ However, several important stratigraphical issues remained unclear and a new area was thus planned on the fringe

8. This is the site of an almost unpublished trench cut by J. Garstang in 1930 (Garstang 1931: 190; 1932: Pl. IX, trench *c-c*), where a very clear section of the EB fortification was visible (albeit unrecorded by Garstang, who published two other similar cut to the north and east of it: Garstang 1930: 130, Pls. IX–X).

9. Sellin, Watzinger 1913: Fig. 50.

10. MBA sequence: Kenyon 1981: 346–370; MB III: Garstang 1934: 118–130, Pl. XV; Kenyon 1981: 367–370, Pls. 195–197, 336a; LB IIA “Middle Building”: Garstang 1934: 115–117, Pls. XIV, XL; Bienkowski 1986: 112–120, Figs. 59–60; Iron II “Hilani”: Sellin and Watzinger 1913: 67–70, Fig. 42, Photos 15–16, Pl. IV; Weippert and Weippert 1976: 139–145, Figs. 8–9 top.

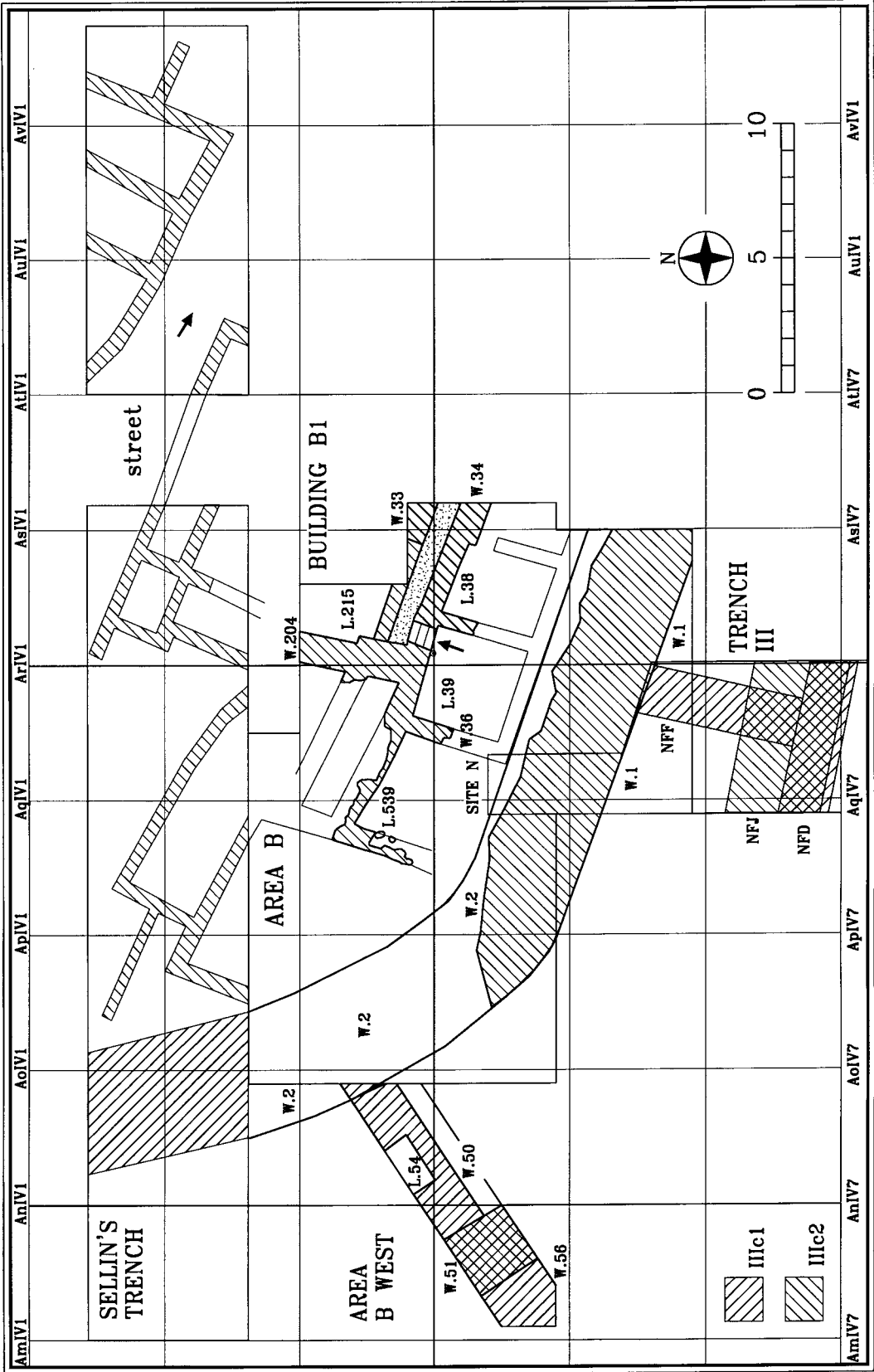


FIGURE 5. Schematic plan of Areas B and B-West, Period IIIc2, EB IIIB, ca. 2450–2300 B.C.



FIGURE 6. Area B-West, thick layer of powdered *huwwara* filling up a blind room between the Inner and Outer City Wall of Period IIIc (EB III, ca. 2600–2300 B.C.), from north-west.

of such excavations.¹¹ A large mudbrick building (G1), dating from EB IIIB (ca. 2450–2300 B.C.), was discovered, after the removal of extensive pits (F.601 and F.603) from the Byzantine period.¹² Three rooms of Building G1 were identified (L.620, L.644 and L.961; Fig. 7). In room L.620, which had two main building phases,¹³ a plastered bin was present along the north wall (B.618), probably for working with liquid substances. The room to the east (L.644) was destroyed by a fierce fire; the roof must have collapsed all together, as testified by the carbonized wooden beams, fallen over the floor and found still parallel one to the other. Six large storage jars were present in L.644 proving that the room was also devoted to storage, being at the same time employed for several activities connected with the transformation of food, attested to by flint blades, flat stones used as working surfaces, benches (B.640 and B.645) and a clay bin against W.637 (B.958), in addition to two free-standing clay

11. Three squares and three half squares were opened on the ground (BaII8, BbIII8, BcIII8 and BbIII7, BbIII9, BcIII9), in addition to a small portion of BdIII9 near W.633, which is the extant wall part of the structure that Garstang interpreted as belonging to a MBA “Palace” (1934: 118, “rooms 80–81”, pl. XV) and which Kenyon ascribed to the LBA (1993: 679–680): W.633 in fact is now considered to be a MBA terracing wall (compare also note 5).
12. Similar pits were already noted by Kenyon on the central plateau, e.g., in Trench I (Kenyon 1981: Pl. 236, phase lxxvii) and they probably surrounded the Byzantine village on top of the tell (see Area H, below).
13. In the first phase the western limit of the room was represented by W.612, associated with floor L.646; following a probable subsiding of W.612 the room was restricted by W.614, associated with floors L.631, later covered with L.620.



FIGURE 8. Area G, Burial D.641 in the course of excavation (late MB I, ca. 1850–1800 B.C.), from west.

bins (B.642 and B.643). The easternmost room (L.961) has only been identified in the 2000 season and it is only possible to note the alignment of its south wall with the southern limit (W.616) of the other two rooms, which speaks for a certain degree of monumentality for the building, for which its scale and the wealth of archaeological finds indicate that it must have had a public function. The sector to the north of W.623 seems to be of a different nature, although it is directly joined to Building G1: W.624 is quite narrower than the other structures and it is aligned neither with W.612, nor with W.614; it is probable that this phase is contemporary with the refurbishing of floor L.620. The ramp covered with pebbles (L.627) to the east of W.624 seems to be the foundation for a short stairway.

Later phases cutting through the ruins of the EB III building consist of an EB IV oven (T.606), which was partly cut by a late MB I mudbrick-built tomb (D.641). In the tomb were buried two flexed bodies, apparently (after the field analysis by E. Spagnoli) an adult and a female ca. 12–14 years old, with two sacrificed animals and six vessels, of which at least one contained food offerings (Fig. 8). Under the typological profile, the vessels belong to the late MB I horizon (ca. 1850–1800 B.C.; compare the assemblages cited below in note 14). The female wore a pair of bronze double earrings, a necklace of carnelian and rock crystal beads, a bronze pin for closing the tunic on the left shoulder, some chains of frit beads and a bronze ring with a bone scarab of local manufacture, while another scarab was found under the left side of the head. On the eastern slope of the Spring Hill during MB I three burials were also found by Kenyon in her Squares HII–III, down slope to the north-east in respect of Area G.

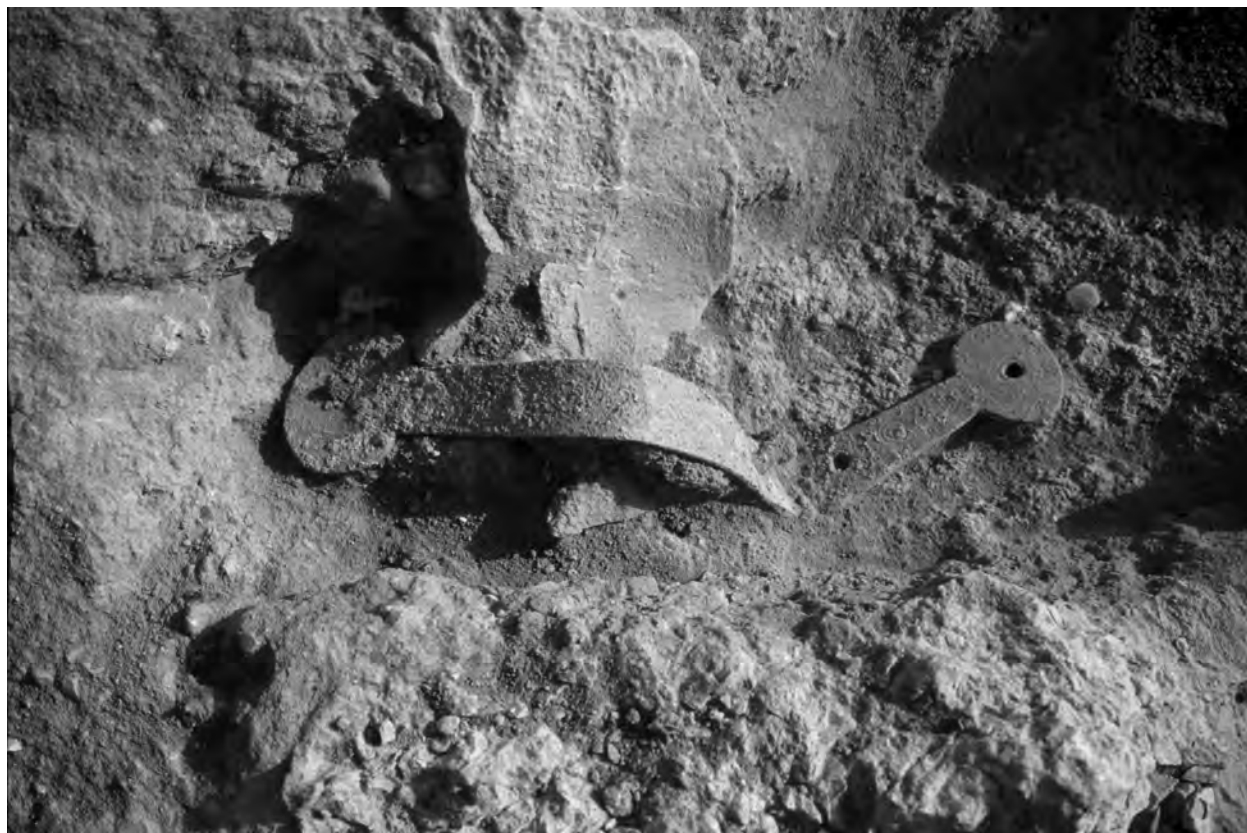


FIGURE 9. Area H, Byzantine decorated bronze hinge TS.00.H.40 *in situ* (6th cent. A.D.).

The possibility that at Jericho during MB I the tombs were mostly located near houses within the settlement is strongly suggested by the presence of other tombs from the same period down slope to the north-east, in Kenyon's Squares HII–III.¹⁴

Area E

The excavations of 1999–2000 have completely brought to light the stone structure first identified in 1998 and preliminarily interpreted as a fortification buttress (Tower E1, W.270 in Fig. 10) along a stone retaining wall for the late MB I–MB II rampart (ca. 1900–1650 B.C.).¹⁵ Two curving retaining walls adjoined Tower E1: that to the west was already identified in 1998 (W.274) and was further investigated in AIV8, while W.560 extends to the east reaching W.5, which has a straight joint with W.560 and is of more powerful construction.

14. Kenyon 1981: Figs. 5 (tomb HAR), 13: 1–14 (pottery assemblages), Pls. 187b, 188–189, 192b, 328a. One should note the almost complete absence of MB I tombs in the necropolis lying to the north-west of the tell: see Kenyon 1965: 203–206, Fig. 93, for the single tomb (K3) of such period found in the cemetery.
15. Marchetti and Nigro 2000: 183–185, Figs. 4: 6–10. The *locus* number (W.268) assigned in 1998 to the south-east corner of Tower E1 is now omitted. In 1999, squares AIV8, AIV9, AIV9 (southern half), AIV10 and AIV10 were opened on the ground and excavations were also continued in the 1998 squares. In 2000, square AIV9 and the northern halves of squares AIV11 and AIV11 were excavated, as well as squares AIV10 and AIV10 (representing the rubble of the MB III rampart and later washed materials and thus not marked in Fig. 10).

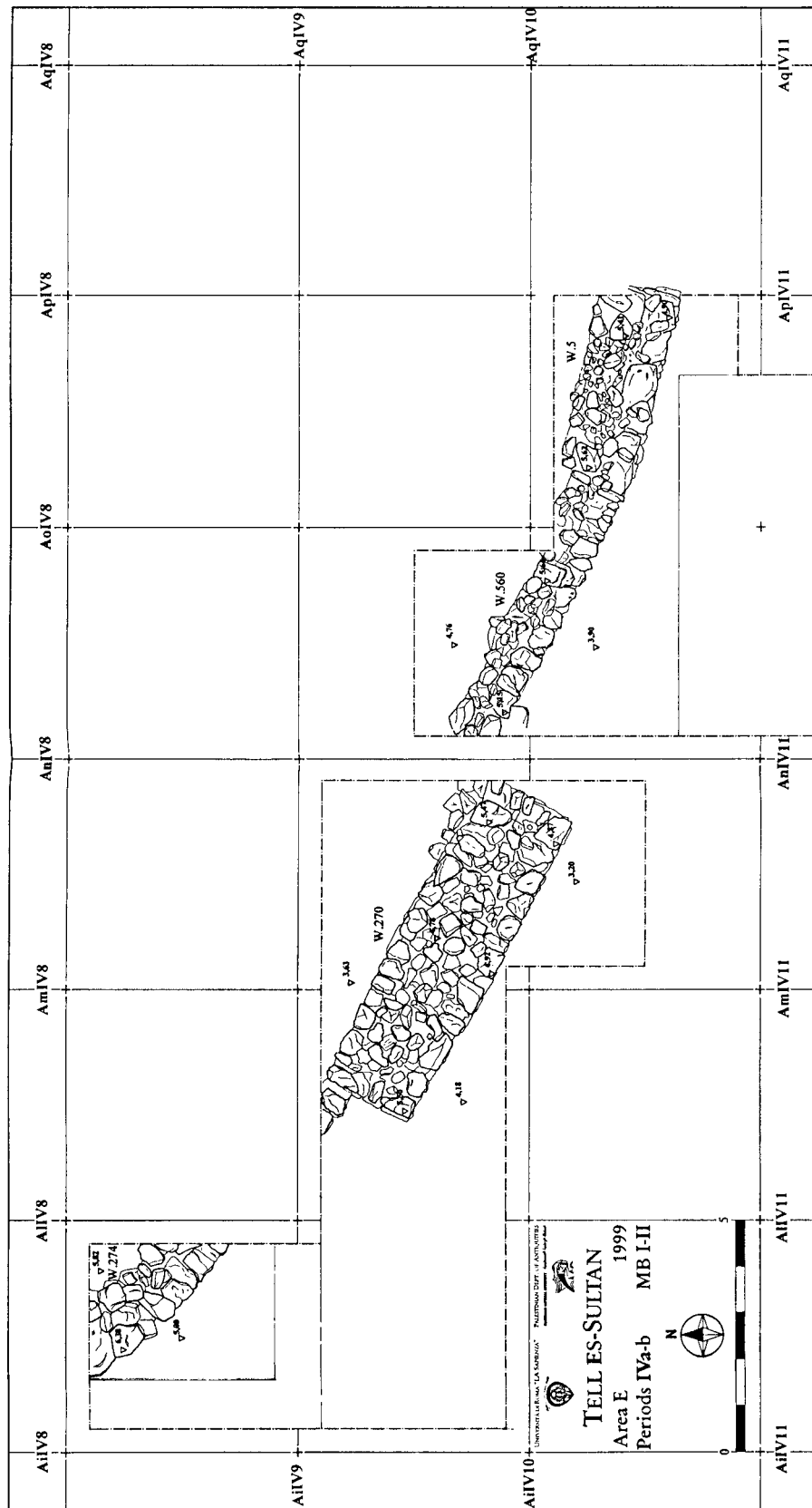


FIGURE 10. detailed plan of Area E, late Period IVa-b, late MB I-II, ca. 1900-1650 B.C.

Area A

After the identification in the seasons 1997–1998 of the MB II (ca. 1800–1650 B.C.) Lower Town to the south of the tell, excavations were continued, with the aim of further exploring the massive structure preliminarily interpreted as a defensive building (Building A1).¹⁶ The south-eastern side of the tower (W.190) was completely excavated and it became clear that W.19 continued to the south-east; such wall is believed to be the eastern limit of a larger complex of which the pebbled floor L.500 represents the inner courtyard (Fig. 11). Outside Building A1, to the east, two walls (W.503 and W.521), with two reconstructions, belonging to another MB II house, were also identified (Building A4).¹⁷ During the 2000 season, a sounding to the west of Area A (fig. 1) has confirmed the extension of such quarter, although no limits for Building A1 could yet be found.¹⁸

Area H

In 1999 a new area was opened on the summit of the tell, north of the tourist shelter, on a saddle between Areas G and F. Here burnt remains of a collapsed building were clearly visible on the surface suffering erosion. The sounding was limited to a single square (BeII19), where a Byzantine mid-6th century A.D. house (L.704) was discovered. An interesting set of materials (pottery, glasses and objects), including many fragmentary “Gaza Ware” amphorae, was retrieved. In 2000 the exploration was extended surveying several stone structures visible on the surface, clearly contemporary with the house discovered in BeII19. Six houses were identified, bordered by open spaces and refuse pits.¹⁹ The Byzantine settlement seems to have been a small rural village resting upon the ruins of the preceding cities, in an area roughly corresponding to the northern and eastern parts of the tell.

Conclusions

Restoration of excavated mudbrick structures was continued in 1999 thanks also to the collaboration with MAPEI (Milan), which has previously carried on systematic analyses of the physico-chemical features of mudbrick samples from the various areas.²⁰ In Area B a viewpoint has been realized to the east of the EB III city-wall, which is here visible for a length of more than 50 m, while ancient mudbrick structures have been restored and protected by means of a cap of new mudbricks, plastering the faces of the walls with a special mortar. In Area A, Buildings A1 and A2 have respectively been consolidated by means of ethyl-silicate and protected and restored. During the 2000 campaign, a complete exposure of the fortifications of Area E has been accomplished, enhancing the visibility of Tower E1, now

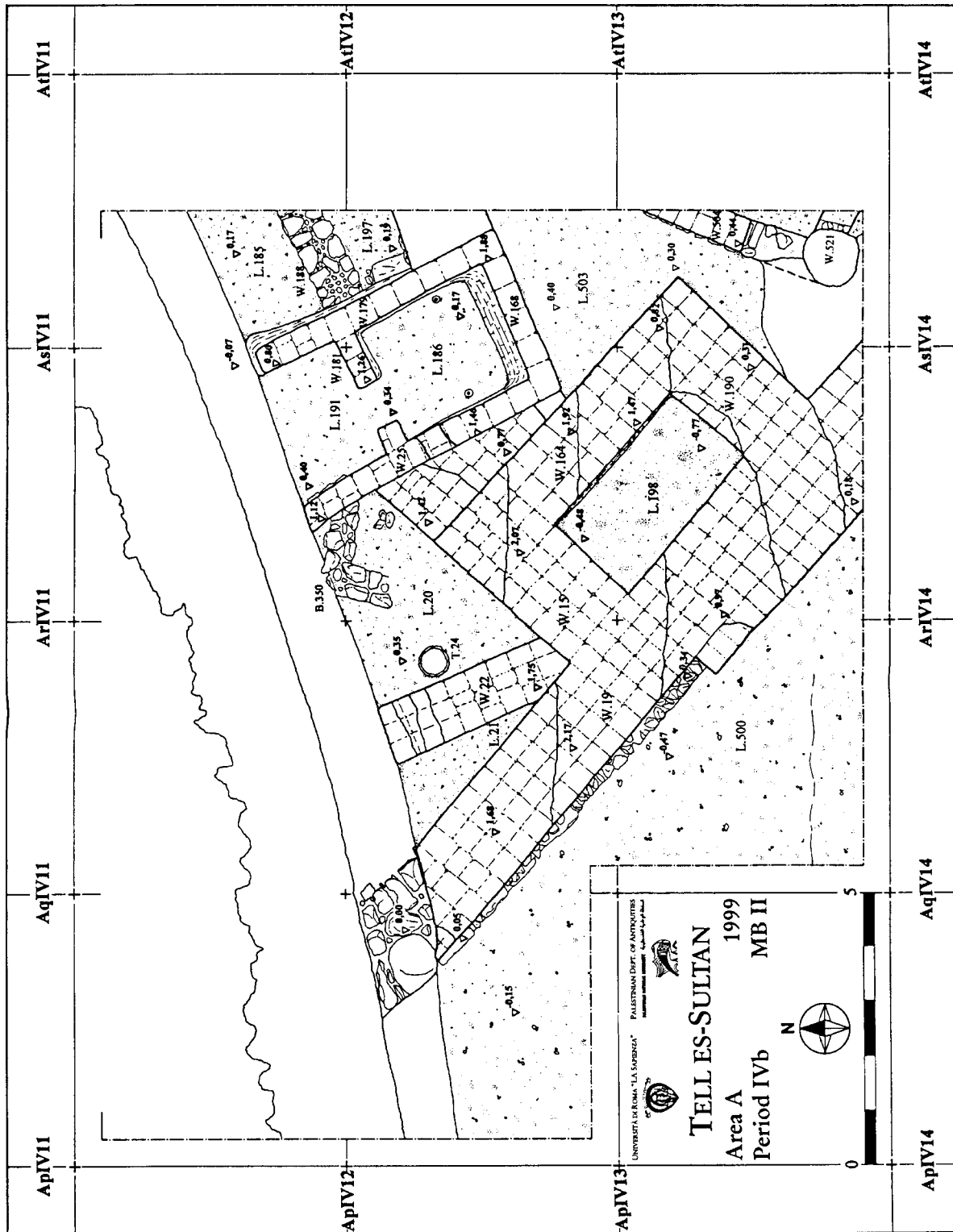
16. In 1999 the southern half of squares ArIV13, AsIV13 and AtIV13 (only in its western half) was excavated, as well as square ApIV13 (not marked in Fig. 11).

17. See Marchetti and Nigro 2000: 207–214, Figs. 5: 7–8, 23–30 for the central phases of the residential quarter.

18. The sounding was made in the southern half of squares AmIII12 and AnIII12 (see Fig. 1).

19. Some of these pits were also identified in Areas C, G, F and in Kenyon’s Square M and Trench I (e.g., Kenyon 1981: Pl. 236 phase lxxvii), thus suggesting that they were located around the houses. To the south-east of square BeII19, a decorated bronze hinge (TS.00.H.40, l. 27 cm), probably belonging to a coffin, was found on the surface (Fig. 9).

20. The consolidating effect of ethyl-silicate, generously supplied by MAPEI in the necessary large quantities, has been confirmed where enough clay is contained in the mudbricks (see also Marchetti and Nigro 2000: 287–295, 349–354).



part of the touristic path for the visit of MB fortifications at the base of the tell. New illustrative panels of the excavation areas were set on the ground, thus ensuring a rich and correct information for tourists (ca. 300.000 every year).

The excavation results obtained in the seasons 1999 and 2000 by the joint Italian-Palestinian Expedition at Tell es-Sultan have provided new insights into the urban structure of the Bronze Age town, focusing not only on the fortification systems, but also on the detailed urban history throughout the III and II millennia B.C. and on the changes in material culture, in order to get a closer historical understanding of the archaeology of Jericho and the southern Jordan Valley.

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Tel Rehov: The Contribution of the Excavations to the Study of the Iron Age in Northern Israel

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Abstract

This paper presents the principal results of the first four seasons of excavation at Tel Rehov in the Beth Shean Valley in northern Israel, one of the largest Bronze and Iron Age sites in the southern Levant. During the 13th–9th centuries B.C.E., the entire mound was densely settled, showing a continuity of urban life, despite several destruction and rebuilding phases. A major cultural shift occurred early in the 10th century, when the Canaanite tradition in the pottery industry came to an end and new ceramic forms appeared, which may be related to the emergence of the Israelite monarchy. Three occupation levels from the 10–9th centuries B.C.E. mark the dynamic development of the city under the Israelite state. One destruction of this city may be dated either to Shishak's raid in 925 B.C.E., or to an undefined event that occurred in the first half of the 9th century B.C.E. A subsequent severe destruction brought the occupation of the lower city to an end in ca. 830 B.C.E. During the 8th century B.C.E., settlement was restricted to the upper mound, and the city thrived until the Assyrian conquest of 732 B.C.E. The massive defensive wall of the upper city may have been constructed shortly before the Assyrian attack. There is some evidence of a short period of occupation under Assyrian rule.

The rich and well-stratified assemblages of architecture, pottery, seals, clay figurines and cult stands, and two short inscriptions, together with the wealth of faunal, botanical and geomorphological data, make Tel Rehov a major site for research of the Iron Age period in the territory of the Northern Kingdom of Israel. In addition to domestic architecture, an open-air sanctuary was also found, as well as abundant finds related to religious practices.

The results of the excavations are of great significance for the current debate over the chronology of the Iron Age I–II in the southern Levant.

Introduction

Tel Rehov (Tell es-Sarem) (Figs. 1–2) is the major mound in the Beth Shean Valley in northern Israel. This valley is part of the Jordan Valley, which in turn is part of the great Syro-African Rift Valley. Due to its strategic location, abundant springs and fertile land, the valley was a favored area for settlement in antiquity, and, therefore, is strewn with dozens of sites representing dense settlement over many periods. The aim of the Beth Shean Valley Archaeological Project, directed by the author on behalf of the Institute of Archaeology of the Hebrew University, is to study the settlement history of the region during the Bronze and Iron Ages. In this context, nine seasons of excavation were conducted at Tel Beth Shean between 1989 and 1996 (Mazar 1993a-c; 1997a-b) and studies of the changes in



FIGURE 1. View of Tel Rehov, looking south.

the settlement patterns in the valley are encouraged, one of which has already been completed (Maeir 1997).

Tel Rehov is a ten-hectare mound, comprised of an upper and a lower mound of 5 hectares each. The upper mound is approximately 20 m higher than the fields surrounding it, while the lower is around half as high. The site is identified with Rehov (Rahabu), the capital of a Canaanite city-state during the second millennium B.C.E. and a neighbor of Pella (Pella) 11 km to the east, on the eastern side of the Jordan Valley.

From 1997–2000, four seasons of excavation were conducted at Tel Rehov (Mazar 1999).¹ Two areas (A and B) were excavated on the upper mound, and five on the lower mound: one on its western slope (Area D) and four (Areas C, E, F and G) on its upper part. The excavations provided a stratigraphic sequence and abundant data on the changes in material

1. The excavations at Tel Rehov, directed by the author, are conducted under the auspices of the Institute of Archaeology of the Hebrew University and sponsored by Mr. John Camp. The core staff in the first four seasons included D. Browning, S. J. Koh, R. Mullins, N. Panitz-Cohen, Y. Shor, A. Sumakai-Fink, D. Weinblatt, and A. Ziv-Esudri; registration: D. Davis; field photography: J. Camp; surveying: M. Caplan; restoration: O. Mazar; geology and geophysical surveys: D. Maki, E. Silbermann and R. Amit; paleobotany: U. Baruch; osteology: M. Craig; computer programming: N. Appelbaum; groundstone study: L. Petit. Additional permanent staff included S. Camp, P. Cowie, D. Edelman, L. Silvermann, W. Wilson and N. Yahalom. Volunteers from many countries and institutions participated in the excavations.

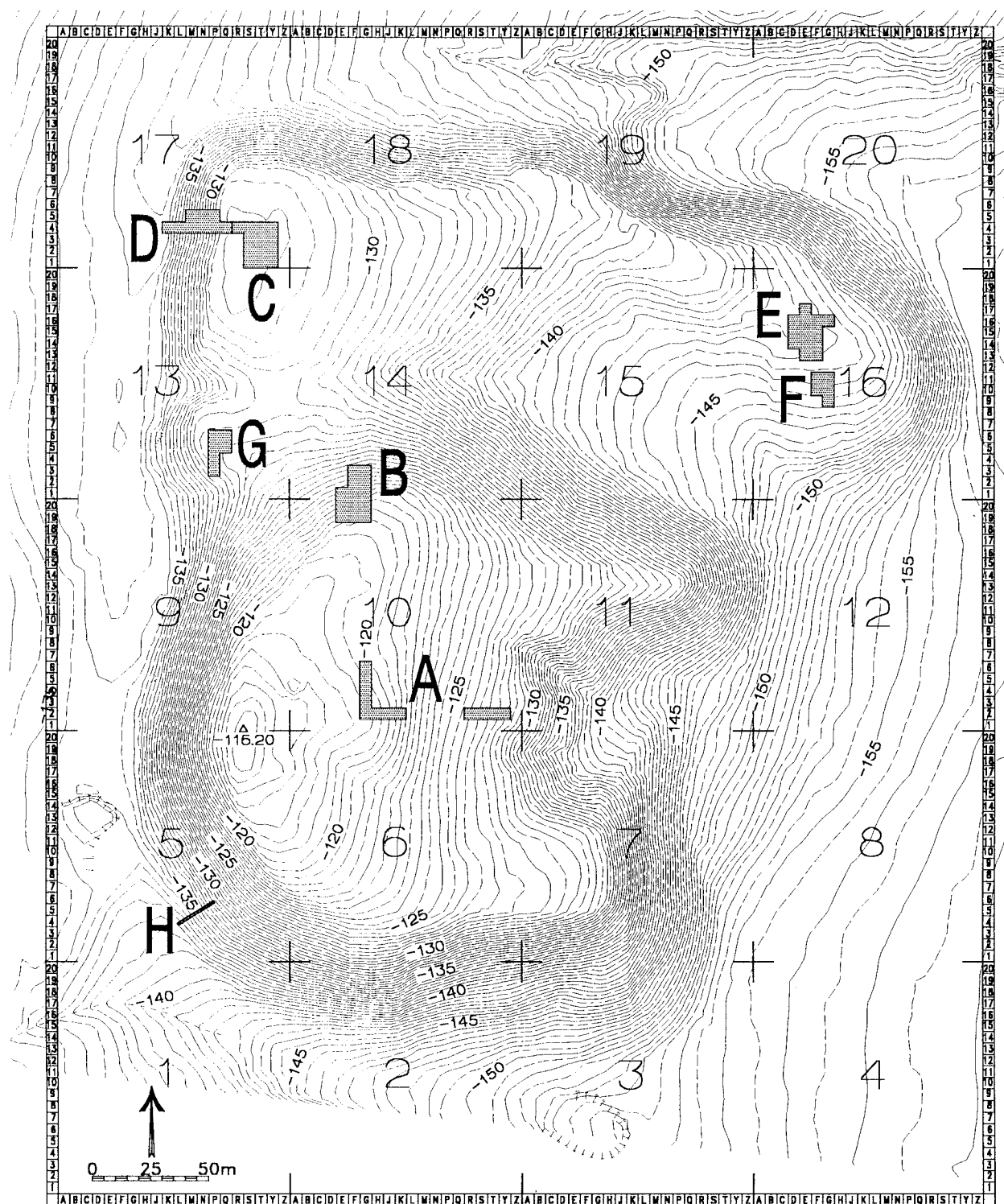


FIGURE 2. Topographic map of Tel Rehov, with location of excavation areas.

culture in northern Israel between the 12th and 8th centuries B.C.E. This constitutes one of the most complete stratigraphic sequences for the Iron Age in Israel in particular and the Levant in general. In addition to the well preserved buildings, the excavations produced large, restorable pottery assemblages, a significant number of seals, seal impressions, and figurines, and important results from the geological, geomorphological, archaeozoological

and archaeobotanical studies, as well as a series of C¹⁴ dates. The excavation data have important implications for a variety of issues relating to the Iron Age, including the current debate on the chronology of the period.

In this paper, I will briefly survey the principal results of the excavations and their implications for the study of the Iron Age in the southern Levant (for a preliminary report on the first two seasons of excavation see Mazar 1999).

Cultural-Historical Background

Rehov (etymologically deriving from “piazza, open space”) is mentioned in several Egyptian sources (see references in Mazar 1999: 2–3). Rehov appears in the topographic list of Tuthmosis III (No. 87), in Letter No. 2 from Taanach (15th century B.C.E.), and on the stela of Seti I from Beth Shean, which mentions that Rehov has remained loyal to the Egyptian administration located in nearby Beth Shean, whereas the cities of Hamath, Pehal and Yenoam have revolted. In Papyrus Anastasi I, Rehov is mentioned in relation to Beth Shean and the Jordan River, Papyrus Anastasi IV mentions the manufacture of chariot parts at Rehov, and Papyrus Torino (20th Dynasty) mentions bronze vessels from Rehov (although the last two may refer to another city of the same name).

During the Iron Age, the northern valleys of ancient Israel underwent several stages of cultural and geo-political changes. In the first half of the 12th century B.C.E., the region was still part of the Late Bronze Age infrastructural framework: the Egyptian New Kingdom stronghold at Beth Shean continued to function until the time of Ramesses VI or VIII, and the Canaanite cities in the region probably also continued to exist. Upheavals followed the end of Egyptian domination, as is evident from the destructions of Megiddo (Stratum VIIA) and Beth Shean (Level VI). Evidence of a similar destruction was also found in Area D at Tel Rehov. According to the biblical account, the region was not conquered by the Israelites, and Canaanite occupation continued until the eve of the Israelite United Monarchy in the early 10th century B.C.E. (Judg.1: 27). This account is supported by the archaeological evidence at both Tel Beth Shean and Tel Rehov: these cities were rebuilt soon after the end of the Egyptian domination, with Canaanite material culture continuing throughout the Iron Age I. According to the biblical narrative, the region became part of the Israelite kingdom during the 10th century B.C.E. Beth Shean appears in the list of Solomon's administrative districts (1 Kings 4: 12). The list of cities conquered by Shoshenq I (biblical Shishak) ca. 925 B.C.E. mentions Rehov after “The Valley” and before Beth Shean (Kitchen 1973: 293–300, 432–447). Rehov, however, is not mentioned in the Bible at all.

During the 9th and 8th centuries, the region was part of the Northern Kingdom of Israel. The royal citadel of Ahab at Jezreel was located only 19 km northwest of Rehov, and Beth Shean became particularly important during his reign, given the ongoing wars with the Arameans in Gilead, east of the Beth Shean Valley. Following Ahab's death in one of these battles and Jehu's revolt, the Arameans, and perhaps also the Assyrians (under Shalmaneser III), invaded northern Israel, most probably passing through the Beth Shean Valley. Israel continued to control this region until the conquest of Tiglath-pileser III in 732 B.C.E.

Current studies of the emergence of the Israelite state focus on the debate concerning the dating of the archaeological assemblages (Finkelstein 1996; 1998; 1999; 2000; Mazar 1997c; Ben-Tor 2000) and the evaluation of the biblical sources relating to the United Monarchy. The excavations at Tel Rehov contribute important new data relating to this debate, since well-preserved and rich occupation strata from the Iron Age IIA (10–9th centuries

B.C.E.) were found in most of the excavated areas, and several phases of Iron Age I occupation were excavated in the stepped trench on the western slope of the lower mound (Area D). The lower city was abandoned after a severe destruction, most probably during the second half of the 9th century B.C.E., and the later Iron Age II city was limited to the upper mound and continued to exist until the Assyrian conquest.

Table 1 summarizes the stratigraphy of each of the excavation areas at Tel Rehov, with the left column representing the final strata attributed to the Iron Age II at the end of the 2000 season. Table 2 lists the proposed correlation between Tel Rehov, Megiddo and Hazor. The following summarizes several of the main issues stemming from the excavations.

The Iron Age I Occupation Sequence in Area D

The 5-m-wide stepped trench excavated on the western slope of the lower city (Area D) provided a window through which the occupation history of the site during the Late Bronze IIB–Iron Age I periods could be examined (Fig. 3). No fortifications from these periods were found, although the last city, dated to the Late Bronze Age, is located on almost the same level as the alluvial plain west of the mound.² The excavation of this trench, although limited in scope, indicated a continuity of Canaanite urban life throughout the 13th until the late 11th century B.C.E. Seven stratigraphic divisions were found, which can be consolidated into three main construction phases, each of which ended in a severe destruction. Phases D9–8 are dated to the 13th century and probably came to an end ca. 1200 B.C.E.; Phases 7–6 are dated to the first half of the 12th century, corresponding to the Egyptian 20th Dynasty and Beth Shean Level VI (Strata S4–3 of the new excavations at Beth Shean). In Phases 5–4 of the late 12th and 11th centuries B.C.E., a solid building was constructed, destroyed, and rebuilt at least once; and Phase 3 of the late 11th or the early 10th century B.C.E. contained approximately 30 pits of various sizes and shapes, some of which were plastered. Several of the pits cut each other, indicating that this activity continued over a considerable period of time. The pits contained ash and food remains (mainly olive pits). The phenomenon of a large number of trash and storage pits is well known in the Iron Age I, for example, at Tell Deir ‘Alla further to the south in the Jordan Valley.

Throughout this period of intensive building activity, destruction and rebuilding, Canaanite material culture continues. Painted pottery is predominant, some of it in the local style of wide wavy bands painted in light red. No burnished pottery was found in these strata. The presence of a few imported Philistine Bichrome sherds is evidence of some connection with Philistia.

The Iron Age IIA (ca. 980–ca. 830 B.C.E.)

Stratigraphy and architecture

The term Iron Age IIA is used to designate the material culture of the 10th and the 9th centuries, until the Aramean wars of ca. 840–830 B.C.E. (see below). Strata VI, V and IV at Tel Rehov date to this period. Strata V and IV were widely exposed in Areas B, C, E, F and G, while Stratum VI was exposed within a limited extent, mainly in Area C. It should, however, be born in mind that these general strata attributions are based on the correlation between the stratigraphic phases in six different excavation areas (see Table 1), which is not

2. As archaeological and geomorphological research has shown, however, the level of the plain west of the mound rose considerably in the course of the historical periods.



FIGURE 3. View of the step trench in Area D, looking east.



FIGURE 4. Area C: general view to the west.

an easy task. In some cases, buildings continued in use from Stratum VI to V and/or V to IV. Thus, the correlation of phases proposed in Table 1 may need to be revised in light of the results of future excavation seasons. Nevertheless, the stratigraphy in each of the excavation areas was clear, and rich assemblages of pottery and other artifacts could be attributed to the various phases. The nature of the transition between the various strata differs from one architectural complex to another. Thus, in Area C, part of the Stratum V building was heavily burnt and replaced by a new building in Stratum IV, while the remainder of the same building continued in use in Stratum IV.

All the buildings thus far excavated in these strata were constructed of mudbricks, with no stone foundations. Although sufficient evidence has not yet been excavated to provide a plan of a complete building, the architecture of these buildings appears to differ from the typical Iron Age II architecture prevalent in ancient Israel. No pillars were found, nor any indication of the existence of “four-room” or “three-room” houses. In Area C (Fig. 4), Stratum VI was comprised of two buildings. The northernmost building is divided into a series of small chambers and the southernmost includes a large hall (3.5 x 6.3 m) with well-preserved walls, in which two openings were preserved to the height of their lintels (Mazar 1999: 18–19, Figs. 7–8). The hall perhaps was part of a public building or of the dwelling of a wealthy family. In Stratum V, the area was rebuilt after the Stratum VI destruction, along new lines that nevertheless preserved some of the earlier planning principles. Part of an *insula* was excavated, with remains of at least three different buildings, including long walls, large spaces and courtyards, as well as several very small and massively built storage chambers. At the end of Stratum V, some of these buildings were destroyed in an intense fire and new



FIGURE 5. Charred wood foundations for a floor and mudbrick wall of Stratum V (9th century B.C.E.) in Area C.

buildings were erected on top of them in Stratum IV, while other Stratum V structures continued in use in Stratum IV, with some modifications.

In Areas F and G, parts of private dwellings were excavated, and in Area E, an open-air sanctuary was found (see below).

The excavations along the western edge of the mound (Areas C and G) did not produce any evidence of fortifications, and only the eroded walls of houses were found, suggesting that the lower city was not fortified. In Area B, however, on the northern slope of the upper city, facing the lower city, a double wall defense system (each wall approximately 1 m wide) was built in Stratum IV, with a drainage system constructed of stones. The double wall abuts a poorly preserved tower. This is not a massive fortification, and perhaps served only as an internal fortified enclosure or an architectural complex of a public nature. Although only two small parts of the city have thus far been excavated, the impression is that it was a well planned city: the buildings appear to be constructed in well-designed blocks (*insulae*), with long walls parallel each other.

An unusual building technique for this period was found in Stratum V, Areas B, C and G, which involved using timber construction for the foundations of both walls and floors (Fig. 5). Both the mudbrick walls and the floors made of lime or beaten earth were constructed above a network of beams of various kinds of local wood laid crosswise in two layers. In the southeastern part of Area C, such a network of beams was found in a ca. 15-m-long, 3-m-wide strip. To the best of my knowledge, this construction technique is thus far unique in the southern Levant. One possible explanation for the use of this technique in Stratum V

is that it was considered an efficient device to make the buildings less vulnerable to seismic shocks. Tel Rehov is slightly east of the center of the Syro-African fault-line, and the region is known to be prone to earthquakes. There are some hints that the earlier Stratum VI city was destroyed in an earthquake. It is possible, therefore, that when the city was rebuilt in Stratum V, an attempt was made to construct the new structures on a flexible “shock-absorber” foundation that could protect the buildings during future quakes. This explanation, however, requires further corroboration.

The pottery assemblages of Strata VI-IV and Iron Age chronology

The abundant finds indicate that during Strata VI, V and IV, Rehov was a thriving city, with trade connections reaching the Phoenician coast, Cyprus and, to some extent, Greece. The beginning of Stratum VI marks a distinct change in material culture, with the appearance of a new ceramic tradition characteristic of the Iron Age II replacing the Canaanite tradition of painted pottery that had continued throughout the Iron Age I. The painted pottery, which continued until Stratum VII, is replaced in Stratum VI by red-slipped and hand-burnished ware, and a new repertoire of forms appears. This transition occurred in large parts of the country during the first part of the 10th century (according to the traditional chronology; see Mazar 1998). Although the Stratum VI pottery assemblage is limited due to the relatively small area excavated to date, its principal feature is the appearance of red slip and hand burnish on bowls, kraters, jugs and other small vessels. Painted decoration still occurs, but consists mainly of poorly painted red bands. The pottery of Strata V and IV (Mazar 1999: 39, Fig. 24) is well attested in the rich assemblages of restorable vessels found in destruction layers above floors. These assemblages are very similar to each other, and are reminiscent of the Strata VB and IVB-VA assemblages at Megiddo (Finkelstein et al. 2000: 265–300), the pottery of the royal enclosure at Jezreel (both in the construction fills and the destruction level; Zimhoni 1997: 13–28; 35–56); the rich pottery assemblage from Strata IIb and IIa at Horbat Rosh Zayit in the western Galilee (Gal and Alexandre 2000: 34–122); and, to a lesser degree, the pottery of Hazor Strata X-VIII. The assemblage includes a variety of new forms, among them jars of the so-called “Hippo” type and various bowls, kraters and jugs, many of them red slipped and hand burnished. Phoenician imported pottery includes Bichrome jugs and fragments of Black-on-Red vessels that may originate on the Phoenician coast or Cyprus. Cypriot imports include fragments of White Painted pottery dated to the Cypro-Geometric II–III and one Bichrome globular jug attributed in Cyprus to the Cypro-Geometric III (not earlier than 850 B.C.E., according to traditional Cypriot chronology, but this chronology might require revision).³

3. Dr. Joanna Smith of Columbia University, who is publishing the Cypriot imports found at Tel Rehov, maintains that Cypriot absolute dates for this period may require revision. The attribution to stylistic groups was made by Gjerstad on the basis of typology, and the absolute dates depended on correlations with sites in the Levant, both of which need to be revised. The finds from Tel Rehov will play an important role in this revision. Concerning the Bichrome jug from Rehov, Smith writes: “Though the jug is of a ‘Type III’, which puts it in Cypro-Geometric III, which is normally dated 850–750, I think that type III/CGIII is actually earlier than we have hitherto expected. The paper I gave at the Annual meeting of the American Schools of Oriental Research, November 2000, suggested a late 10th through 9th century date. . . . The problems with the Cypriote typology are such that much of what we have taken to be strictly a linear chronology is actually an amalgam of regional groupings.” (E-mail to the author sent in November 2000).

This pottery assemblage is central to the current debate over the chronology of the Iron Age IIA in Israel. According to traditional chronology, the assemblage would be dated to the 10th and early 9th centuries B.C.E. Megiddo VB and IVB–VA are attributed to the reigns of David and Solomon, respectively (see, for example, Mazar 1990: 372). The discovery of a similar assemblage in the destruction level of Jezreel (Zimhoni 1997: 39–55) is of great importance for establishing absolute chronology, since this destruction certainly post-dates the reign of Ahab, and was probably the result of one of the upheavals that occurred during the mid 9th century B.C.E.: either the revolt of Jehu or the wars against the Arameans (possibly led by Hazael), ca. 840–830 B.C.E. The similarity between the pottery of Jezreel and that of Megiddo IVB–VA led Finkelstein to suggest that the latter should also be dated to the period of the Omrides in the 9th century B.C.E. (Finkelstein 1996; 1998; 2000). This suggestion was rejected by the author and by Ben-Tor and Ben-Ami, on the grounds that similar assemblages appear in several stratigraphic phases at Tel Rehov and Hazor, and, therefore, should have a longer time-span (Mazar 1997c; Ben-Tor and Ben-Ami 1998; Ben-Tor 2000). It should be born in mind that the monumental royal enclosure at Jezreel was constructed by the Omrides and continued in use only for a short time. Pottery from the construction fills, however, includes similar vessels to those found in the destruction level of the enclosure (Zimhoni 1997: 36–37, Figs. 2.3–2.4) and, therefore, was probably in use in an earlier settlement that was demolished during the construction of the royal citadel. Thus, Jezreel, like other sites, provides evidence of the longevity of this pottery assemblage (Zimhoni 1997: 26). The discovery of similar pottery in three strata at Tel Rehov (VI–IV) also indicates the lengthy time-span of this assemblage.

C^{14} dates from Tel Rehov provide important data on the founding and destruction dates of the Stratum V buildings in Area C (Mazar and Carmi, n.d.). Two beams used in the foundation of a Stratum V building were tested. The first, from an olive tree, was dated to 1400–1260 (1 sigma) or 1430–1210 B.C.E. (2 sigma) and, therefore, must have come from an old tree used in the construction. The second, from an elm tree, was dated to 1130–990 (1 sigma) or 1130–930 (2 sigma). Elm has an average life span of about 50 years, and this date, therefore, may provide sound evidence of a mid-10th century date for the construction of the building. In the Stratum IV destruction layer in Area C, a pile of charred grain was found, sealed by a layer of fallen mudbricks. Eighteen C^{14} measurements of this grain were conducted in two laboratories (nine at the Weizmann Institute of Science and nine at the University of Arizona, the latter using AMS). The results from the two laboratories provided close dates; the weighted average is 2725 ± 6 BP, and the calibrated age is 900–830 B.C.E. (both 1 and 2 sigma). The building in which the charred grain was found was built in Stratum V, destroyed by fire, and partly renovated in Stratum IV. The small chamber in which the grain was found, however, was in use in both Strata V and IV and appears to have been destroyed at the end of Stratum IV (the final destruction of the lower city). The conclusion is that the building of Stratum V was constructed during the 10th century B.C.E., partly destroyed in an intense fire, rebuilt in Stratum IV, and finally destroyed during the 9th century B.C.E., most probably during the events following the death of Ahab, some time between 852 and 830 B.C.E. The destruction of Stratum V could be attributed to Shishak's invasion, ca. 925 B.C.E. (as mentioned above, Rehov appears in Shishak's list), or could have occurred during the first half of the 9th century B.C.E. Stratum VI should be dated earlier in the 10th century B.C.E.⁴

In my opinion, the pottery assemblage from Strata VI–IV had a duration of approximately 150 years, from ca. 980 B.C.E. to ca. 830 B.C.E. This evaluation, based on the time-

span of these strata at Tel Rehov and on the dense stratigraphy at Hazor and other sites, negates Finkelstein's proposal that the dating of 11th century assemblages, like that of Megiddo VIA, be lowered to the late 10th century, and that the entire assemblage under discussion be limited to a time-span of approximately 50 years in the 9th century. This suggestion leaves too short a time-span for the development of the pottery assemblage in several strata. In historical terms, it can be concluded that the Iron Age IIA pottery assemblage was in use both during the time of the United Monarchy and of the Omride Dynasty.

The assemblage of Strata V–IV at Tel Rehov was subsequently replaced in Stratum III by a later ceramic assemblage, by which the Iron Age IIB in northern Israel is defined, as represented in Hazor Strata VII–VA, Megiddo IVA (Finkelstein et al. 2000: 301–323), Beth Shean P8–7 (Mazar 2001) and Tel Rehov III. The later assemblage probably continued in use from ca. 830 B.C.E.–732 B.C.E., and perhaps somewhat later. Each of the assemblages from the Iron Age IIA and IIB had a time-span of 100–150 years, as did parallel assemblages in Judah and on the Coastal Plain (Zimhoni 1997: 57–262; Mazar and Panitz-Cohen 2001). This later assemblage characterizes the Iron Age IIB in northern Israel. The changes in material culture during the 10th century that define the transition from the Iron Age I to the Iron Age IIA period, as evidenced at Rehov and other sites, can be related to the rise of the Israelite state. The 10th century appears to have been a formative period, during which the Jezreel and Beth Shean Valley regions were incorporated into the Israelite state. The thriving states of the 9th century did not appear suddenly: the flourishing 9th century Northern Kingdom of Israel was preceded by an earlier formative stage in the 10th century, which can be identified with the time of United Monarchy of David and Solomon. An evaluation of the extent and degree of development of the 10th century United Monarchy, however, is beyond the scope of this paper (for my opinion see Mazar, forthcoming).

Cult, Art and Glyptics at 10th–9th century Tel Rehov

Religion.

Significant data concerning cult practices during the 10–9th centuries B.C.E. were excavated at Tel Rehov. In Area E, an open-air sanctuary was found, which included a spacious courtyard surrounded by walls and several well planned structures on its periphery (Fig. 6). A raised platform was built on the southern side (constructed in Stratum IV, but it probably had earlier phases). Three standing stones were found on the platform, and in front of it, a large stone slab that could have served as an offering table, a baking oven, and a large square-shaped ceramic cult stand with triangular apertures (Fig. 7). Two rooms to the south of the platform appear to have had a special function. One of the rooms had a unique architectural decoration: repeated impressions of a large seal (7 m long) were made in the mud plastering of the wall. The decorative motifs of this seal included Phoenician-style closed and open lotus flowers and volutes. This room also produced a jar with a fragmentary incised inscription on its shoulder. Many pottery vessels, mostly small containers, were found in both rooms, which may have functioned as the “office” of a priest or official. Many installations used in food preparation were found in the courtyard, as well as several clay figurines and seals. The large number of animal bones also found in the courtyard included cattle, sheep and goats. Approximately 13.6% of the bone assemblage were of wild mountain

4. These conclusions represent a refinement of those published in Mazar 1999: 37–42, and are based on the finds from the 1999–2000 seasons.

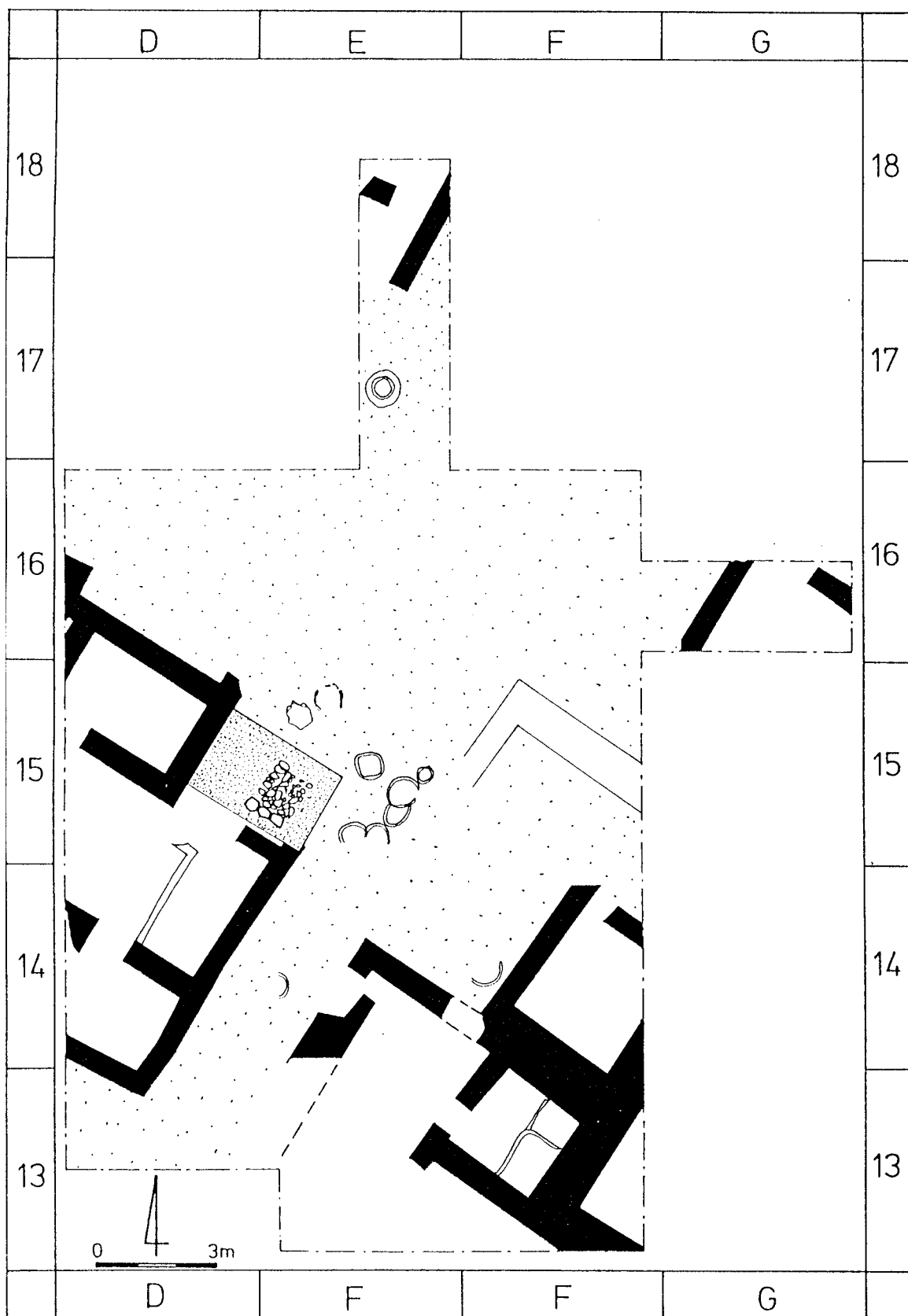


FIGURE 6. Schematic plan of the open air sanctuary at Area E.



FIGURE 7. Pottery cult stand (altar) from Area E. (10/9th centuries B.C.E.).



FIGURE 8. Clay figurine of a crouching fertility goddess from Area C (10th century B.C.E.).

goat (*Capra ibex*), not found in the other excavation areas. This indicates a specific activity, probably related to sacrificial practices conducted in the sanctuary. Many ceramic vessels were found in several concentrations in the sanctuary area, among them a number of chalices, as well as Phoenician imported vessels, including a unique and elaborately painted Phoenician jar. No similar sanctuary is known elsewhere in Iron Age II Israel, and it was probably used by a group of families or a clan in the immediate vicinity. The standing stones could have served in an ancestral cult, with the courtyard used for sacrifices and shared ritual meals.

Evidence of cultic activity was also found elsewhere in the city. In the heavy destruction of Stratum V in Area C, a second square ceramic cult stand was found, together with an elaborate petalled chalice painted in red, black and yellow. The stand has arch-shaped apertures, with the front decorated with an incised sacred tree flanked by two nude female figures in relief, a scene probably representing the cult of Asherah as fertility goddess. The upper part of the stand has a flat roof, which shows evidence of fire, surrounded by a parapet with four corner “horns,” reminiscent of the horns on contemporary stone altars from Megiddo and elsewhere. The shape and decorative motifs resemble two fragmentary stands found at nearby Pella, in a context dated to the 10th century B.C.E. (McNicoll et al. 1992: Pls. 70–71). Fragments of two additional stands were found in Areas B and C. Thus, this type of ceramic stand appears to have been common at Tel Rehov and Pella during the 10th–9th centuries



FIGURE 9. Conical seal and its impression from Stratum IV at Tel Rehov (9th century B.C.E.).

B.C.E. The contemporary, albeit somewhat different, stands from Taanach and Megiddo probably served a similar function as domestic altars. Several clay figurines of females, among them a unique example of a crouching(?) nude female figure, were also found (Fig. 8).

Seals

The typical stone seals, of which six examples were found at Tel Rehov in Strata VI–IV, are either conical shaped or in a form of scarabs. The decorative motifs include horned animals, birds, crabs, plants and simple human figures (Fig. 9). Similar seals are known from the same period in northern Israel.

Three rectangular seal impressions on storage-jar handles depict schematic human figures, in two cases, in a *tet-beche* composition. These are made in a peculiar schematic style unknown elsewhere.

The two types of seals are evidence of local glyptic styles that preceded the inscribed seals of the 8th century B.C.E. and later in Israel and Judah. The un-inscribed seals of the 10th–9th centuries may have been personal seals used in commercial transactions, etc., although they may also have been related to some kind of royal administration. The rectangular and some of the ovoid seals were impressed on jar handles, probably denoting ownership.

These finds add interesting new data to our limited knowledge regarding religious practices and art in the 10th–9th centuries in northern Israel. They indicate strong Canaanite/Phoenician influences in this region, at a time during which it was part of the Northern

Kingdom of Israel, but the local population may still have been comprised mainly of descendants of the local Canaanites.

Rehov in the 8th century B.C.E.: Stratum III

Following the violent destruction of Stratum IV, the lower city was abandoned and the settled area was reduced by half and limited to the upper mound. Stratum III, with several sub-phases, represents the 8th century city, which came to an end with the Assyrian destruction of 732 B.C.E. In Area B, a massive fortification wall had been constructed. The 9-m-wide offset-inset wall was constructed of mudbricks, without stone foundations (the lowest course of bricks was laid on mattresses, of which a layer of white phytolith was preserved). The inner face of the wall was preserved to a height of 1.2 m, while the outer face was eroded almost to the foundation course. It appears to have been a massive, high wall, built to withstand the onslaught of Assyrian battering rams.

Parts of dwellings and courtyards were excavated on the upper mound, inside this wall and in Area A, where there was evidence of a massacre of people in their homes: two bodies of females were found in dramatic positions on the floors, one thrown into the corner of a room and the other, without the head, lying across a heap of loomweights. The Stratum III pottery is typical of the Iron Age IIB in northern Israel (see p. XX above).

The Assyrian period (Stratum II)

A short-lived settlement during the period of Assyrian rule (Stratum II) followed the destruction of Stratum III. Two graves found in Areas A and B each included a single body in a contracted position, together with a single local imitation of a ceramic Assyrian bottle. Scattered remains of floors and walls above the ruined city wall in Area B provide evidence of minor occupation in this period, but this seems to have been a short-lived and poor settlement.

Geomorphological Studies

The location of Tel Rehov close to and west of the Syro-African fault-line provided an opportunity to study the impact of tectonic and seismic activity on the morphology of the site in the historical periods. Research included a high resolution seismic reflection survey (Zilberman et al. 2000), which revealed several fault-lines below the mound and enabled a reconstruction of the original topography of the site before human intervention. Thus, the depth of the occupation layers could be determined as 20 m deep on the upper mound and 7–8 m deep on the lower mound. It was not possible to determine, however, whether any of these fault-lines or other tectonic movements had an impact on the topography of the city during the historical periods.

Stratigraphic evidence in Area D indicated that during the Late Bronze Age, between the 15th and early 13th centuries, there was a small lake or pond at the foot of the mound, on the western side. This pond created a 1.2 m thick layer of travertine, which covered a 16th century B.C.E. occupation layer, approximately 1.5 m lower than the current level of the plain to the west of the mound. This evidence suggests that the drainage system around the mound was modified, perhaps as a result of seismic activity and the substantial rise in the level of the plain west of the mound during the historical periods.

Conclusions

The first four seasons at Tel Rehov clearly indicate that it was one of the largest Bronze and Iron Age sites in ancient Israel. The excavations in the lower city showed that during the 13th–9th centuries B.C.E., the entire mound was densely settled, with a continuous urban occupation throughout, despite several destructions. A major cultural shift occurred early in the 10th century, marked by the end of Canaanite traditions in pottery making and the beginning of new traditions typical of the period of the Israelite United Monarchy and early Divided Monarchy. The 10th–9th century city had several construction phases, with a severe destruction bringing the occupation of the lower city to an end between 850 and 830 B.C.E. An earlier destruction may be dated to either Shishak's raid or another event in the first half of the 9th century B.C.E.

Following the final destruction of the lower city, settlement was restricted to the upper mound, where the city thrived until the Assyrian conquest of 732 B.C.E. The massive defensive wall in Area B may possibly have been constructed shortly before the Assyrian attack. After the Assyrian conquest, a brief period of settlement was followed by a long gap in occupation until the Early Islamic period, when the summit of the upper mound was resettled and occupied until the Medieval period.

The rich and well-stratified assemblages of architecture, pottery, seals, clay figurines and cult stands, and two short inscriptions, together with a wealth of faunal, botanical and geomorphological data, make Tel Rehov one of the major sites for research of the Iron Age in northern Israel. These excavation results have great significance for the current debate concerning Iron Age chronology in Israel and the nature of the United Monarchy of David and Solomon, and contribute important new data to the study of the architecture, cult practices and art of the Iron Age II in Israel.

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Table 1: Tel Rehov Stratigraphic Table

Final Stratum	Area D	Area C	Area E	Area F	Area G	Area B	Area A	Period	Dates
	-	-	0			0	1a	Late Islamic	Undated burials
I	-	-				1	1b	Early Islamic	8–12 cent. C.E.
II	-	-				2	2	Iron Age IIC	Late 8th early 7th(?) cent. B.C.E.
III	-	-				3	3a 3b	Iron Age IIB	Until 732 B.C.E.

Table 1: Tel Rehov Stratigraphic Table

IV	-	1a	1a	1	1	4	4	Iron Age IIA	Until ca. 830–840 B.C.E. Ahab United Monarchy
V	-	1b	1b	2	2	5a 5b			
VI	1-2	2	2	3-4	3	6			
VII	3 4 5	3						Iron Age IB	Until 990–980 B.C.E. ca. 1150 B.C.E.
	6 7							Iron Age IA	Early 12th century B.C.E.
	8 9a 9b							Late Bronze IIB	13th century B.C.E.
	10							Late Bronze I–IIA	15th–14th cent. B.C.E.
	11							MB/LBI	16th cent. B.C.E.

Table 2: Tel Rehov, Megiddo and Hazor in the Iron Age: Comparative Chronological Table

Rehov Final	Megiddo	Hazor	Period	Historical background and dates	Main Pottery features
-			Late Islamic	Burials	
I			Islamic	8th–12th cent. C.E.	
II	III	IV	Iron Age IIC	Assyrian Domination	Assyrian pottery
III	IVA	VA VB VI VII	Iron Age IIB	Until 732 B.C.E.	Iron Age IIB northern assemblage
IV	Building of IVA(?) IVB-VA VB	VIII IXa IXb Xa Xb	Iron Age IIA	Until ca. 830 B.C.E. Ahab United Monarchy	Iron Age IIA northern assemblage (red slip and hand burnish dominant)
V					
VI					

Table 2: Tel Rehov, Megiddo and Hazor in the Iron Age: Comparative Chronological Table

VII	VIA VIB	XI XII	Iron Age IB	Until 990-980 B.C.E. From ca. 1150 B.C.E.	Painted pottery in Canaanite tra- dition, a few Phi- listine sherds
	VIIA		Iron Age IA	Early 12th cen- tury B.C.E	

New Results from the Excavations at Tell el-Ghaba, North Sinai, by the Argentine Archaeological Mission (1998–1999)

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Abstract

The main tasks for the fieldwork during 1998 and 1999 in this Saite settlement were the geophysical survey and the continuation of the excavations down to virgin soil. The result of the survey was the remarkable discovery of large buildings. The lab studies were mainly done on the typology and the analysis of the fabrics from the Egyptian and the Iron Age III imported ceramics, and on the lithic artefacts. The results point out to an early Saite settlement dating from the end of the VII century and the beginning of the VI Century B.C., probably with an industrial function.

During the First International Congress on the Archaeology of the Ancient Near East held in Rome in 1998, the results of the first three campaigns of the Argentine Archaeological Mission at Tell el-Ghaba, North Sinai, Egypt¹ were presented. The results pointed towards a Saite settlement dating from the beginning of the 26th Dynasty. Tell el-Ghaba was a frontier site at the shore of a lagoon on the Way of Horus, with four occupation levels, with the remains, until the 1997 excavation, of four mud-brick buildings, and a large amount of pottery (local, from Upper Egypt, the Levant and the Aegean). Some workshops, probably for the manufacture of faience objects, were found in one of the areas.

The fieldwork done during 1998 and 1999 had two priorities. The first priority was the geophysical survey of the site, focused in the Areas IV, V, VI, VII and VIII and carried out by Jorge Trench. The second priority was the systematic excavation down to virgin soil in the Areas I and II, and a horizontal excavation of a massive structure in the Area VI. A short excavation was made in the Areas III and V as complementary work. The excavations were carried out under the direction of Eduardo Crivelli.

The geophysical survey was accomplished with a Geoscan Gradiometer Flux-Gate type FM18 and, as a complement, with a Geoscan Resistance Meter RM15 with Multiplexer. The first gradiometer survey was performed in the Area IV, in grids of thirty by thirty meters, one sample per meter and 1 nanoTesla sensitivity, one meter traverse interval and zigzag mode. Then it was performed in the Area V, increasing the sensitivity to 0.1 nanoTesla, two samples per meter, and traverses in a parallel mode. Finally it was done in the Areas VI, VII and VIII at the sensitivity of 0.1 nanoTesla, four samples per meter, and zigzag mode.

1. This is a joint project of the National Scientific Council (PREDE-CONICET) and the University of Buenos Aires, within the frame of the "Archaeological Salvage Project of the Monuments in North Sinai".

The results of this geophysical survey were as follows: no important geomagnetic anomalies that could be attributed to an archaeological origin were found in the Area IV, it means that no occupation was detected there. In the Area V some hearths and a low signal of a mud-brick structure were detected, this was part of the Building E mainly located in the Area II. In the Area VI at least two mud-brick buildings with a magnetic orientation north-south appeared. In the Areas VII and VIII five new buildings of approximately twenty by twenty meters and the features of another three were detected.

The Wenner method using the Geoscan RM15 resistivity meter was performed in the Areas VII and VIII, from the edge of the Area I, in three consecutive lines for thirty meters southwards, in four lines westwards (Area VII) and in three lines eastwards. This survey also detected occupied sections.

In Area I the Building A (BA-BC/41–42), a flimsy feature, was completely uncovered. It has rectangular shape, with at least two rooms, and a limestone door socket where the entrance could have been. It was delimited by ditches, which may have lodged reed or mat walls. Locus 356 is a foundation trench of this building, with many objects (a foundation deposit?): nineteen clay loom-weights (ten sun dried and nine fired), a pumice sharpener, two small jars, faience beads, slag and fragments of bronze (Fig. 1).

As an example of the ceramic from the stratum II, I considered the pottery from one of the floors of Building A, Locus 40. This locus has preserved a collection of fragmentary pottery, small finds and other objects. The pottery is mainly made of Egyptian fabrics (88 percent) and 28 percent are imported. The Egyptian fabrics include Nile silt clays (89 percent), Marl F (6 percent) and Upper Egyptian Marl A₄ (4 percent); the imported pottery is mainly Levantine (85 percent) and some Cypriote (15 percent). The small finds are faience amulets, a statuette of Sekhmet (Inv. No. 500), seven necklace beads, three fragments of bronze and a fragment of bronze slag; a lead weight for fishing nets and a natural shell. No mud-brick architecture appeared in the earlier occupation levels in this area, i.e., in the strata I and II.

Two features from stratum II in Area II are interesting. One of them is the foundation trench Locus 356 of Building A filled with objects related to the function of Building A, probably a workshop, as already mentioned. The other feature, called Structure G (BA41, Locus 275) (Fig. 1), has two concentric, sub-circular ditches dug into the sand with many pits—one with a pottery vessel—some of them connected by canals; at the centre of this feature is a small floor (two meters in diameter) with many sherds, fish and mammal bones. This could also be a workshop as well, even if its function is still not clear. Several scarabs, included a Men-Kheper-Ra scarab, come from this area.

The most intensive use of the site occurred in stratum III. In Area I Building B, a mud-brick structure, with four rooms, two courtyards with an oven, a cellar and a small porch with a bricked surface in the south-eastern side and limestone door sockets was completely uncovered. It had a domestic and industrial function, because of the two large ovens Locus 13—with two large pots—and Locus 176, found in the courtyards, although only the base was preserved. It was built directly on the refuse of previous occupations without foundation trenches. Other ovens or hearths in the area are the loci 66, 78 and 179 (with a pot on the burnt fill of this oven).

One of the floors (Locus 271) and the cellar of Building B (Locus 84) preserved a pottery collection. Eighty nine percent of the pottery is made of Egyptian fabrics and only eleven percent are imported from the Levant. The Egyptian fabrics include Nile silt clays and Marl F (95 percent), and Marl A₄ from Upper Egypt (6 percent).

After the collapse of the Building B this area was deserted and used for a domestic and industrial function. There were found: a) a bricked surface (Locus 102) with an oven (Locus

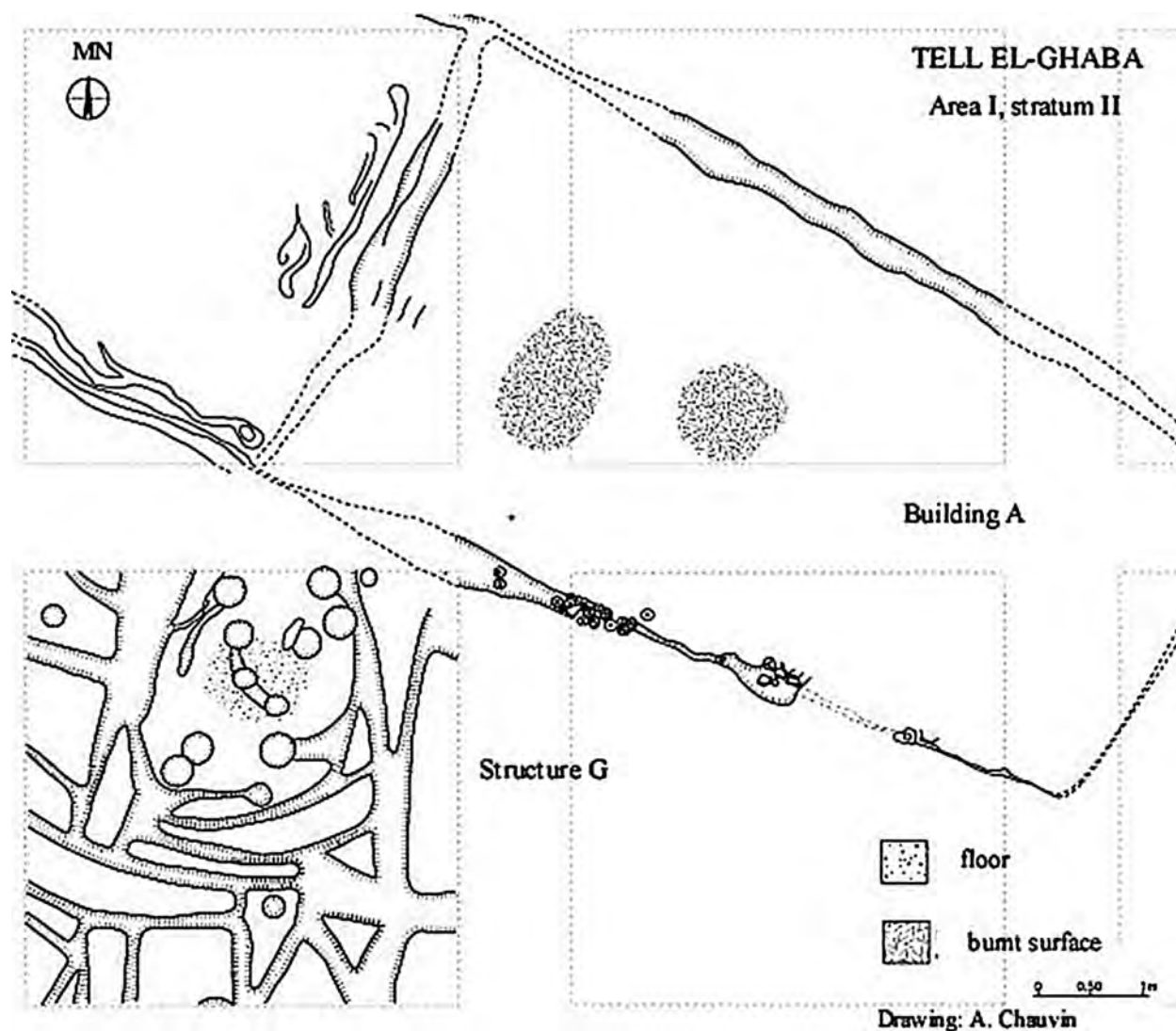


FIGURE 1. Tell el-Ghaba. Area I, stratum II.

186) to which a canal was connected, containing faience slag; b) Locus 314 is a canal, which belonged to a workshop filled by carbonaceous and oxidized sediment, for making faience objects, with a complete bowl, many sherds and faience slag. The loci 391 and 315 were also industrial ovens for the manufacture of faience objects.

Later on, deep pits and ditches cut across the site; in many cases they were filled by the carbonaceous Locus 1, which seems to have been formed during a thorough burning of the site. This is a very rich archaeological level: pottery, small finds and fire features, among them two cooking fornios containing many fish bones. In its upper part, short, thin floors can be recognised. Fishing was still a major activity. They are also traces of industrial activities in Locus 1: a limestone block which had been cut with a wire or saw, and two limestone basins.

In Area II stratum III is represented by the basement of Building C (Locus 1008), only two layers of mud-bricks are preserved. This building was built on a previously occupied area, which included an industrial oven (L 1039), with faience slag, and a living floor (Locus 1091) associated with a hearth (Locus 1090).

Another mud-brick structure in the same area is Building D. According to Crivelli, it could be a public building with an administrative function. It is a very complex structure, with several phases of construction. The last phase comprised at least ten casemates of different shapes. The lower loci belong to an earlier building, Building L, which indicate non-intensive human frequentation, which could be contemporary with Building A, stratum II, also built on foundation trenches.

In Area V Building E (Locus 5003) is part of a mud-brick structure also with casemates, twelve meters by sixes meters in the part survey. A small buttress, 2.40 m² was built on the north. It continues north-westwards and north-eastwards, but both sections are under dunes. The images of the gradiometer survey in this area seem to show the remains of a building. It has topographic interconnection neither with Building D nor with Building C, and it seems to be contemporary with Building B, stratum III.

In Area VI the basement of Building F, detected by the geophysical survey in 1998 and excavated in 1999, is a mud-brick structure at least twenty five by twenty five meters, with seventeen casemates of different size.² It is possible that we are dealing with two adjacent buildings.³ To the north and south of the complex, several large hearths (perhaps ovens) were found. No floors or foundation trenches were found.

By geomagnetic surveying the following buildings were detected on the site: the Building H in the Area VII and the Buildings I, J and K in the Area VIII. They could belong to stratum III, that is, to the main period of the site.

Stratum IV is a destruction period. Deflation, pits and trenches, some of them belonging to light or non-permanent constructions, characterize the Locus 1, the stratigraphic expression of the destructive episode produced by a strong fire. It is a carbonaceous unit resting over different loci and filling many depressions. Abundant pottery sherds, faunal remains, small finds and no formal architectonic structures were identified. Between Locus 1 and the modern top soil, a sandy and sometimes carbonaceous fill almost without archaeological material.⁴

The geophysical survey showed that Tell el-Ghaba extended for at least of 120,000 m² (= 12 ha), 500 m long, northeast-southwest in a fringe parallel to the lagoon, and 250 m wide from the actual lagoon edge. It is possible that along the southern border of the lagoon the site could extend westwards for another 250 m long and 100 or 150 m wide (ca. 37,500 m² = 3.75 ha). Part of the settlement could probably continue eastwards, but this area is inside the lagoon and so out of the concession. The maximum depth of the archaeological deposit is ca. 1.80 m. Only the mud-brick basement of the buildings was preserved, specially on the later level the upper part of which was swept away by erosion. Sediments are salt-rich and

2. The word "casemate" is used here for the spaces in the mud-brick basement of the buildings, filled with sand but with no military functions. Five large (ca. 20 m²), three medium (ca. 8 m²), eight small (ca. 5 m²), and one mostly unexcavated.
3. The reason is that the circulation, as indicated by limestone door sockets, was in the main north-south; no openings were identified connecting the eastern and western parts; the (perhaps) dividing north-south wall (Locus 535) seems to consists of two mud-brick walls.
4. The wall Locus 1029 is, for the time being, the only known architectonic feature built at the site after the destruction episode which formed Locus 1001. In the Area V, west of the Buildings C and E, under the topsoil is Locus 5001, a thick sandy layer, less carbonaceous than in other parts of the site, with quite a lot of pottery, from the same date that those from the same locus in the Areas I and II. Below this locus a hearth, detected by the geophysical survey, with remains of fish and birds bones and pottery was uncovered.

the water table is quite high, which is bad for the preservation of the archaeological material, especially for the organic material.

Four occupation levels, three of them with the remains of eleven structures, nine of them mud-brick basements of buildings, were uncovered or surveyed. The buildings are orientated north-northeast in some areas, i.e., parallel to the lagoon in the eastern part, and north in the south, it means parallel to the southern border.

The Egyptian pottery corresponds to the ceramic Phase IV North,⁵ and the imported pottery to the Iron Age III, which shows the importance of the connection between Egypt and the Eastern Mediterranean in this period. This Saite settlement belongs to the beginning of the 26th Dynasty, which includes the second part of the reign of Psametichus I until the beginning of Psametichus II. It is probable that before the capture of the harbour of Ashdod by Psametichus I in his 29th year (635 B.C.), the Saite dynasty had established some settlements along the Way of Horus, as strongholds for the military campaigns in the kingdom of Judah. Tell el-Ghaba could have been one of these sites. The large amount of Levantine amphorae pointed out to a trade with the Levant, probably in connection with the expansion under Necho II (609–559), who fought in Meggido against the Babylonians. A clay plaque with the representation of a nude female with African features, probably a fertility goddess, could be connected with the campaign of Psametichus II against Nubia at the beginning of his reign. The pottery pointed out to date Tell el-Ghaba as a Saite settlement dating from the second half of the government of Psametichus I until the beginning of the reign of Psametichus II.

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A Recently Discovered Cemetery at Tell el-Dabʿa

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Abstract

This Middle Bronze Age cemetery is situated in area A/II on the southern fringe of the tell, as it is now preserved, to the west of the Canaanite and Egyptian temples and mortuary precincts which dominate this area and is separated from other funerary precincts by its enclosure wall. The use of this necropolis can be dated from the Late Middle Kingdom to the end of the Second Intermediate Period, whilst the individual tombs can be more closely dated by means of the complex stratigraphy (nineteen phases). Most remarkable is that the majority of the tombs was found undisturbed, and the grave goods are thus well suited for statistical and chronological studies. Such undisturbed burial assemblages provide us with a good insight into the social structure of the deceased, and this, together with the temporal development of the cemetery itself will be the main theme of the presentation. Among the graves, particular mention may be made of a warrior tomb with remarkable finds, including a well-preserved scimitar, and its associated servant and equid burials.

Since 1966 excavations have been conducted at Tell el-Dabʿa, directed by Manfred Bietak and his team on behalf of the Austrian Archaeological Institute Cairo and the Institute of Egyptology of the University of Vienna. The topic of this paper will not be the proposed center of the capital of the Hyksos, ancient Avaris, but a suburban area on the Eastern fringe of the site, the so called Tell Area A/II.¹

In this area a temple precinct grouped around a large temple (temple III) of Middle Bronze Age type with surrounding cemeteries was discovered (Fig.1). On its western flank temple II, a (Breithaustempel) temple of Near Eastern tradition and to the east temple V and to the northwest temple I, both of them mortuary temples with an Egyptian layout.² Adjoining to these temples several cemeteries were found which have not yet been excavated: these cemeteries in Area I, VII and VIII and the so called Eastern Cemetery on the Eastern side of the temple enclosure wall. This mortuary precinct with several cemeteries can be dated from the later 13th Dynasty to the end of the 2nd Intermediate Period or even to the beginning of the new kingdom.

During the 1997 Spring Season new investigations were initiated in A/II.³ It was the aim of this project to define more closely the stratigraphy of the tell area. A new cemetery situated to the west of the main temple's enclosure wall was uncovered. Several strata of burials dating from the late 13th Dynasty to the very end of the Hyksos Period could be discerned.

1. For a comprehensive and up to date biography see Bietak 1995.

2. Bietak 1991: Fig.3.

3. See Forstner-Müller 2001.

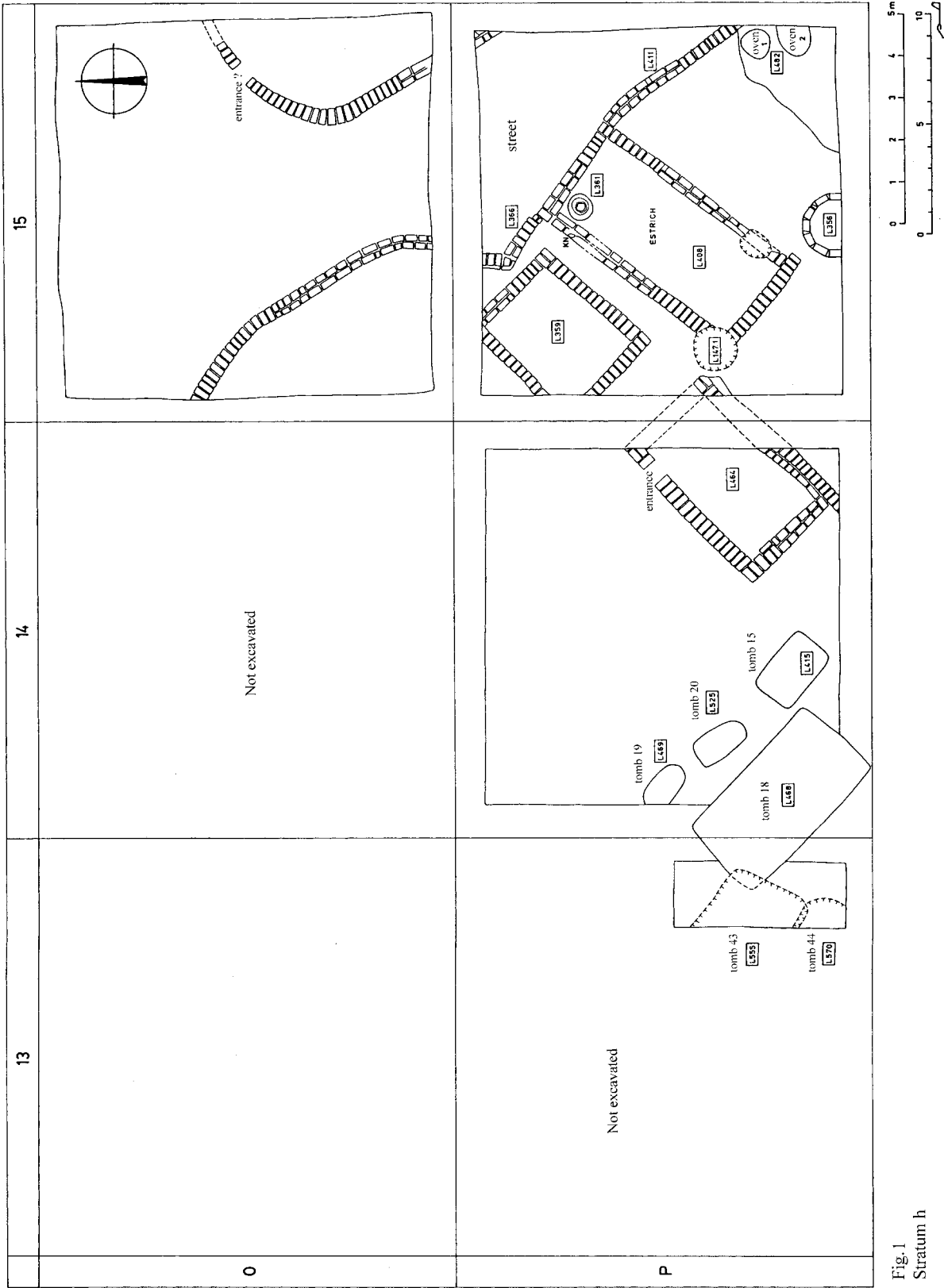


Fig.1
Stratum h

FIGURE 1. Stratum H.

Starting with Stratum k a system of postholes could be traced, one with a limestone column base in the middle, remains of tents which were used by the first settlers (nomads) in this district. The stratum can be dated to the 13th Dynasty (Bietak Stratum H).

In Stratum h the site was used as a cemetery for the first time, a major change occurred during this stratum: the main temple III was founded and family cemeteries were surrounding it. They remained until the end of the Hyksos time (Fig. 1). Immediately after the foundation of the temple several rectangular buildings were constructed. To the west of them was a cemetery with the main tomb L468, which was surrounded by other smaller tombs: the earliest tombs to appear in stratum h were established, to the south tomb 15 which was deeply influenced in its orientation and arrangement of the funerary equipment by the main tomb L468, and two other pit burials which have the same orientation as well.

Three main types of burials were found: vaulted mud brick tombs set into pits, simple pit burials, and infant burials in large vessels of Egyptian and foreign origin (amphorae, beer jars, *zîrs*).⁴ The total number of burials in this relatively small area is 32 in 400 square meters with 5 main strata which can be divided into several substrata. In spite of the very complex stratigraphy it was possible to assign each tomb to its stratum. A remarkable feature is that most of the tombs were undisturbed and therefore produced good material for further stratigraphical and chronological analysis.

The main tomb of stratum h=F (transitional MBIIA to MBIIIB periods) was orientated NW-SE, was very carefully built and set into a pit in such an exact way that the top of the vault was covered, the burial chamber (inside measuring 2.65 x 1.65 m) was made of sandy mudbricks, the side walls five layers high, the back side 10 layers high, the entrance was walled up by well set bricks, the single vault constructed of mud-bricks. The vault collapsed some time after the covering of the tomb and seemed therefore to be destroyed by grave-robbers (Fig. 2.1). Luckily this assumption was not confirmed when the tomb was opened. A single equid skeleton was found in the entrance area together with a round bottomed cup and a jar.⁵ Next to the north-eastern wall a young female servant was buried in a slightly contracted position facing the tomb chamber (Fig. 2.3). The body was placed in this position at the time of the main burial, the head was laid on a brick. Because of the circumstances of this and other burials of the period there is a strong possibility that the girl was offered to her master as a human sacrifice.⁶

The owner of the tomb was placed into it in a supine slightly contracted position with his head towards the entrance (Fig. 2.2, 3 and 4). On his left hand an amethyst scarab was found; possibly belonging to a now lost ring.⁷ He was buried with his weapons and an assemblage of different pottery types. Bones of goats or sheep placed on a dish next to his head are remains of a meat offering. He wore a copper belt with an attached dagger with five middle ribs on his left side.⁸ In his arms he held a scimitar still in its sheath. The sword itself was made of copper and well preserved; the sheath, consisting of an organic material, probably leather, is still to be examined, the handle was made of bone and fixed to the tang by three copper nails. The blade is cast with a riveted socket, its point voluted and therefore unique. It was cast in a closed mould which means either in a two-part mould or using the lost wax

4. Van den Brink 1982.

5. For donkey burials see Bietak 1989, Oren 1997: Fig.8.16–18 and Wapnish 1997.

6. See Bietak 1989. In the meantime, all of the tombs with attendant burials can be dated to stratum F (Bietak personal communication).

7. Mlinar 2001: Nr.18.

8. On this dagger type see Philip 1989: 435–441, Fig. 37.



2.1 Tomb A/II-p/14-no. 18 with collapsed wall



2.2 Warrior burial in tomb A/II-p/14-no.18 with offerings



2.3 Attendant burial and sacrificed donkey

FIGURE 2. 1) Tomb A/II-p/14–no. 18 with collapsed wall; 2) Warrior burial in tomb A/II-p/14–no. 18 with offerings; 3) Attendant burial and sacrificed donkey.

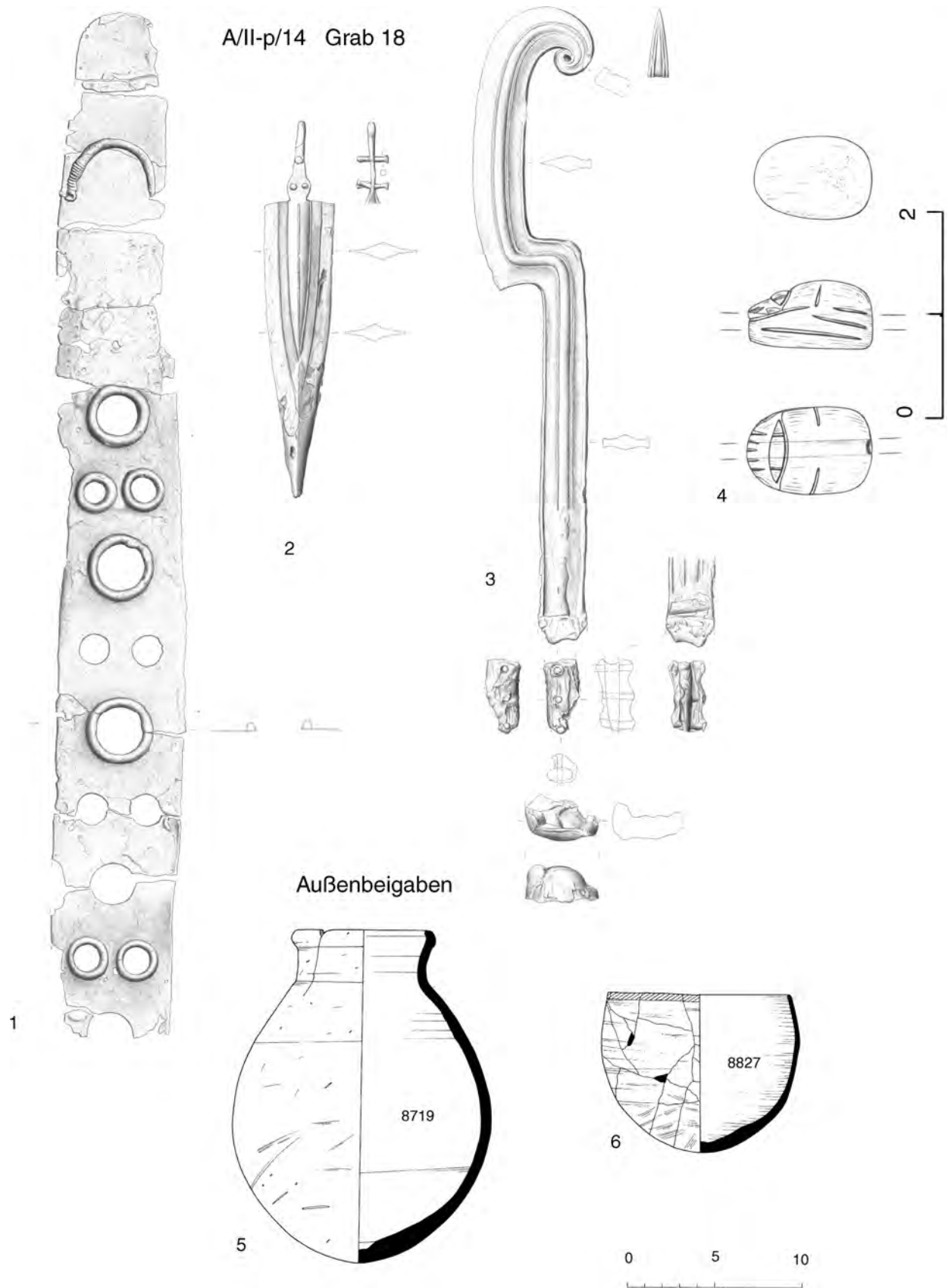


FIGURE 3. A/II-p/14 Grab 18.

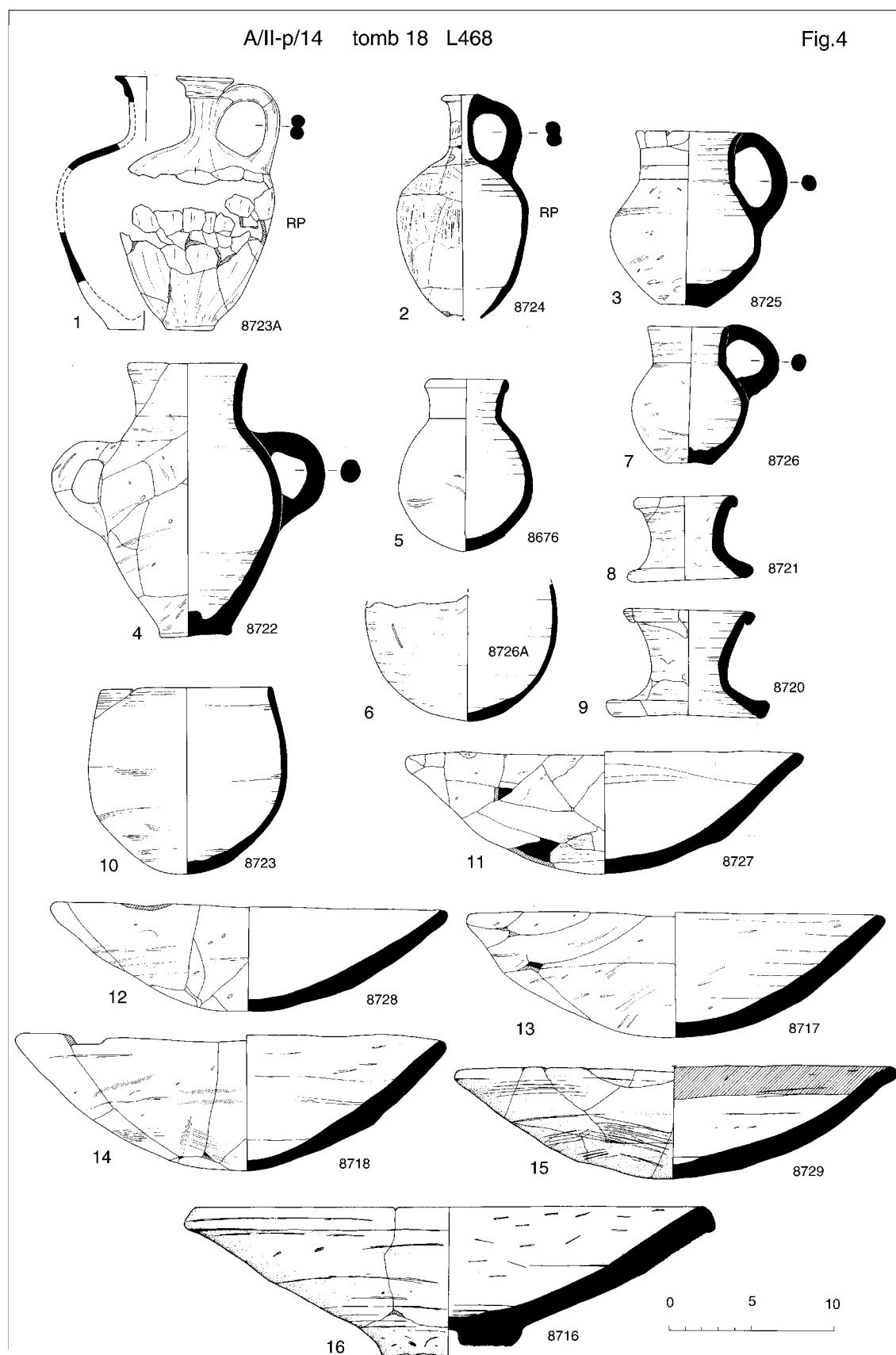


FIGURE 4. A/II-p/14 tomb 18 L 468.

technique. We can clearly see that it is in the tradition of the MBII A weapons. It is the only specimen of this type yet found in Egypt until now.

There must have occurred a change in production methods of weapons during the S.I.P.:
⁹ In earlier examples the handle is fixed to the weapon by nails, later on handle and blade are cast in one piece. Parallels to the voluted point are known from Mesopotamia and Iran (Tello and Susa) which should be dated slightly earlier (19th/18th century B.C.).

An overall view of the funerary equipment, with its combination of Egyptian and foreign goods and habits, confirms the typical picture of most tombs belonging to this period in Tell el-Dabʿa. The tomb is accompanied by several other partly excavated tombs and seems to be at the centre of the group, possibly implying the owner's social status.

A very important fact is the existence of an enclosure wall by which the cemetery is defined. This wall was in use all the time until the beginning of the New Kingdom and was changed only slightly during this period—at times more to the north, later again rebuilt on the same fundamentals. In the earlier strata (h-f) sandbricks were used later on mudbricks which is very typical for the building method in the area A/II and can be helpful for dating.

Not only this cemetery, but all cemeteries were surrounded by such a wall. It is very significant that space was divided into several parts during its foundation and used until the end of the cemetery. So it is not an arbitrary group we have chosen for obscure statistic reasons but an area whose limits were defined in ancient times.¹⁰

Within this district which is separated from the outside and oriented towards the temple complex in the East, a group of tombs and buildings were erected that are closely connected to these tombs and which should be interpreted in this context. The focus here is mainly on the tombs in this context. It is strongly hinted that the cemetery was used as a family or a clan property. The anthropological examinations, which have not yet been finished, will give us further information and will possibly confirm this thesis.

The appearance of weapons and the warrior tomb itself indicate fighting aspects in the social structure of the society of this period. The fact that female servants are buried within the tomb together with its owner as human sacrifices occur only in Stratum h (Bietaks Stratum F) in Area A/II and in area F/I contemporarily.

One may imagine a kind of kinship system although it should be taken into consideration that the area discussed here can present only the eastern suburb of Avaris, a small part of the complete town. There is little textual evidence from Tell el-Dabʿa itself, so how far we dare to jump to conclusions about the Pre-Hyksos and the Hyksos and their form of state by means of material culture is an old and often debated issue. Most striking in this context, however, is the obvious contrast to Egypt, where the idea of a territorial state with central control was dominant.¹¹

Further investigations in Dabʿa and its surroundings, in particular the ongoing excavations in Ezbet Helmi, could provide us with more information concerning such matters.

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9. Müller 1987.

10. See Bernbeck 1997: 258–270.

11. See Trigger 1993: 34–38.

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SECTION V

Varia (Chronology,
Technology, Artifacts)

Staggered Development and Cultural Mutation: Did the Advanced Palestinian Chiefdoms (4000–3500 B.C.) Trade Technology to Prehistoric Egypt?

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Abstract

The middle of the 5th millennium sees the development of interaction between the cultures of Palestine and those of Lower Egypt. These societies were offset by the development of their socio-economic structures; Palestine having acquired technologies representative of the Chalcolithic period, Lower Egypt yet technologically Neolithic. The archaeological excavations in Palestine show that tribal groups settled in various ecological niches near water-sources and practised a sort of farming-herding economy. These groups practice copper metallurgy (certainly obtained from Anatolian and Iranian cultural spheres), feature to an advanced level of craft specialisation, and exhibit a surprising level of artistic sophistication (Ghassoul murals, ivory statuettes from Beersheva, and Golan basalt statues).

In the same timeframe, excavations in Lower Egypt show that tribes settled in large villages near the Nile (Merimde/El-Omari) or in the Fayyûm near Lake Qarûn. These sedentary groups practised agriculture, fishing, and herding. Technologies such as the potter's wheel, the drill, and metallurgy are unknown to these Neolithic societies, though the manufacture of exquisite basalt objects attests to some degree of specialisation. At this period, the contacts between Lower Egypt and Palestine are most likely of a sporadic, "down the line" exchange-type.

Around 4000 B.C., we note an evolution in this interaction. Several ceramic indicators found in the north-western Delta (Buto I) may suggest that a complex exchange network developed, and that culturally Palestinian populations settled on the site. At the same time, several Chalcolithic sites in Palestine reveal products available in Egypt, including gold (Nahal Qanah). The presence at Buto of this locally produced ceramic kitchenware of a Palestinian type points to a Palestinian presence in the Nile Delta, whereas the Egyptian products found in Palestine are most probably imported trade goods.

Around 3650, the social-economic systems of the two regions evolve toward more balanced models, and the trade networks may also be more elaborated. It is in this period that copper metallurgy is transferred to Lower Egypt by intermediary of Palestine. Likewise, we remark transformations in architecture and dwelling-types. In Egypt, the Ma'adi site has yielded at least one structure that presents affinities to certain houses in the Mediterranean Levant, which to our knowledge represents the southernmost advance of an architectural evolution through cultural mutation. Once more, we find proof of a Palestinian presence in Lower Egypt, though this group may be considered a "second wave", as their remnants announce that they were culturally linked to the EB Ia (the preceding "first wave" of 4000 B.C. having been Chalcolithic).

We will attempt to demonstrate in this communication that the interaction between these two regions should be re-evaluated, and that a mounting number of elements

demonstrate that Lower Egypt is situated in the Near-Eastern sphere of influence, wherest came its technological innovations.

In the first half of the fourth millennium, the Nile Valley was inhabited by at least two independent cultural groups, centred around Lower Egypt and Upper Egypt. Their evolution was polarised not only by geographical separation due to the vast desert expanses of Middle-Egypt, but also by the aggregating influences of peripheral cultures. Lower Egypt benefited from links to Palestine and Asia, while Upper Egypt was linked to the Neolithic cultures of Sudan and of the Sahara.¹ A number of indicators revealed by recent research lead us to believe that these Nile entities maintained a relationship,² despite the fact that 250 km of Middle-Egypt remained archaeologically unsettled during this period.³

The cultures of Upper Egypt have long been presented as more advanced compare with the ones of Lower Egypt. This judgement is largely based on the differences of respective ceramic productions in both regions. Northern pottery has been dominated by a rough, monochromatic, and largely undecorated pottery production, while southern cultures produced finely finished ceramics such as the Black-topped polished ware. The Upper-Egyptian productions reflect a technological progress that was unknown to Lower Egypt, notably in the methods of firing. This inequality is underlined by attempts of northern populations (possibly at Buto I, and certainly at Ma'adi) to copy the southern ceramics models.⁴ The notion of unequal cultural evolution is also based on a comparison of lithic tools: Upper Egypt produces flint tools of a refined quality that was never known in the North. Indeed, Lower Egypt imported those fine lithic tools (e.g., U-shape fishtail blade at Ma'adi⁵ and in the Fayyûm).⁶ The North also does not show a great wealth of jewellery, sculptures, and decorative items.

Accurate as these observations may be, the traditional notion of Lower-Egyptian inferiority compared to the South should, however, be nevertheless put into a new perspective, due to numerous recent discoveries which shed a different light on northern populations. They indeed point to the fact that from the beginning of the fourth millennium onward most of the technological innovations take place in Lower Egypt. Recent data acquired at Buto I in the north-western Delta show that Lower-Egyptian populations had made breakthroughs in mass production of ceramic, while Ma'adi, in the south of the Delta, appears to have fostered innovation in the field of metallurgy.

Upper Egypt, in the Badarian period, presents a semi-sedentary way of life,⁷ while Naqada I shows the organisation of small villages built out of light materials (round huts of simple pisé construction with superstructures of wattle and daub as seen at Hammamiya).⁸

1. The relationship between Merimde and Palestine during the fifth millennium is unclear. In contrast, during the same timeframe the Tasian and Badarian cultures show ceramic links with Sudan for the former (introduction of caliciform beaker), and Sahara for the latter (introduction of pottery with rippled-surface). See Hendrickx and Vermeersch 2000: 40–42.
2. Watrin in press d.
3. Kaiser 1956: 90 mentions some Naqadan pottery discovered in the region of Minya but does not give any dating.
4. Debono 1992: 6. Rizkana and Seeher 1987: 51–52.
5. Rizkana and Seeher 1988: Pl. 69: 1.
6. Caton-Thompson and Gardner 1934: Pl. LIII: 34.
7. Trigger et al. 1983: 27.
8. Brunton and Caton-Thompson 1928: 69–88. The “huts circles” of Hammamiya are about 1 m to 2.3 m in diameter. They are thus a bit smaller than the oval huts of Merimde (between 1.50 m x 1 m and 3.20 m x 2 m).

In contrast, the spatial organisation of the Lower-Egyptian settlements and living spaces include large villages at a very early period. These settlements were composed of oval shaped dwellings made of wood and wickerwork, with hearths and store-pits laid out densely on narrow streets (Merimde)⁹ with some remains of an original stone architecture (Ma'adi).¹⁰ The technological advance may be owed to a movement of influence and contributions from the Mediterranean Levant (Palestine) which may have been accompanied by population migrations. This cultural flow from Palestine to northern Egypt will reach the South during the mid- fourth millennium. Those influences then will be reversed again toward the end of the fourth millennium.¹¹

Keeping in mind these elements, the following pages will concentrate on further analyse four principal characteristics which seem to be essential in defining Lower Egypt's cultural advancement:

- The introduction of the potter's wheel (ca. 3900–3800 B.C.).
- The emergence of copper metallurgy (ca. 3700–3600 B.C.).
- The development of stone and mud-brick architecture (ca. 3700–3600 B.C.).
- The cultivation of grapevine and the emergence of new types of containers for liquids (ca. 3500–3400 B.C.).

The above innovations might be explained either by technological transfers brought in during migratory phenomenons, or by adaptation of progressively appropriate foreign models. In considering such hypotheses, it is appropriate to examine at first hand the trade relations between the populations of the Mediterranean Levant at the time.

The introduction of the potter's wheel

The use of the potter's wheel is attested at Buto Ia (ca. 3900–3800 B.C.).¹² Indeed, part of the ceramic material on hand is made up of kitchenware including bowls and goblets with flat bases and straight oblique sides (the so-called “V-shaped-bowls”), bearing painted decorations in stripes both inside and outside.¹³ A few bowls are simply decorated with a red-brown band round the rim. In both cases, the bowls bear traces of throwing on a potter's wheel¹⁴ (centrifugal wavy shape of the rim and forming stripes on the inside, both of which are characteristic of throwing).¹⁵ These ceramics (Fig. 1: 1–3) present characteristics typological

9. Badawy 1954: 13–14.

10. Badawi Afifi 1987: 59.

11. Watrin in press e.

12. We have already treated the chronology of Buto I (e. g. Watrin 1998: 1215) dated by von der Way in Naqada IIb (Way 1997: 81), and even later in Naqada IIc-d (Midant-Reynes 1992: 205). Buto I is much older, though, and probably contemporaneous with Late Badarian/early Naqada Ia.

13. Picture in Faltings (1998a: 368, Fig. 1a). Drawing in Watrin 1997: 33, Fig. 7. This type of decoration in Palestine can also be found on jars (e. g. Nahal Mishmar, this article: Pl. 1: 8).

14. We confirm Faltings's analysis (1998a: 366–367), they are indeed Palestinian bowls thrown on a wheel, and not bowls with a “reserved spiral decoration”, and thus not technologically deriving from Northern Syria (Amuq phase F) (Brainwood and Brainwood 1987: 233, Fig. 173). As Von der Way (1987: 247) did not have complete forms at his disposal but only pottery sherds covered with a decoration of white stripes, he must have interpreted these white stripes as part of a spiral pattern.

15. The same observation can be made on Palestinian specimen from Zeita (Perrot 1997 personal communication).

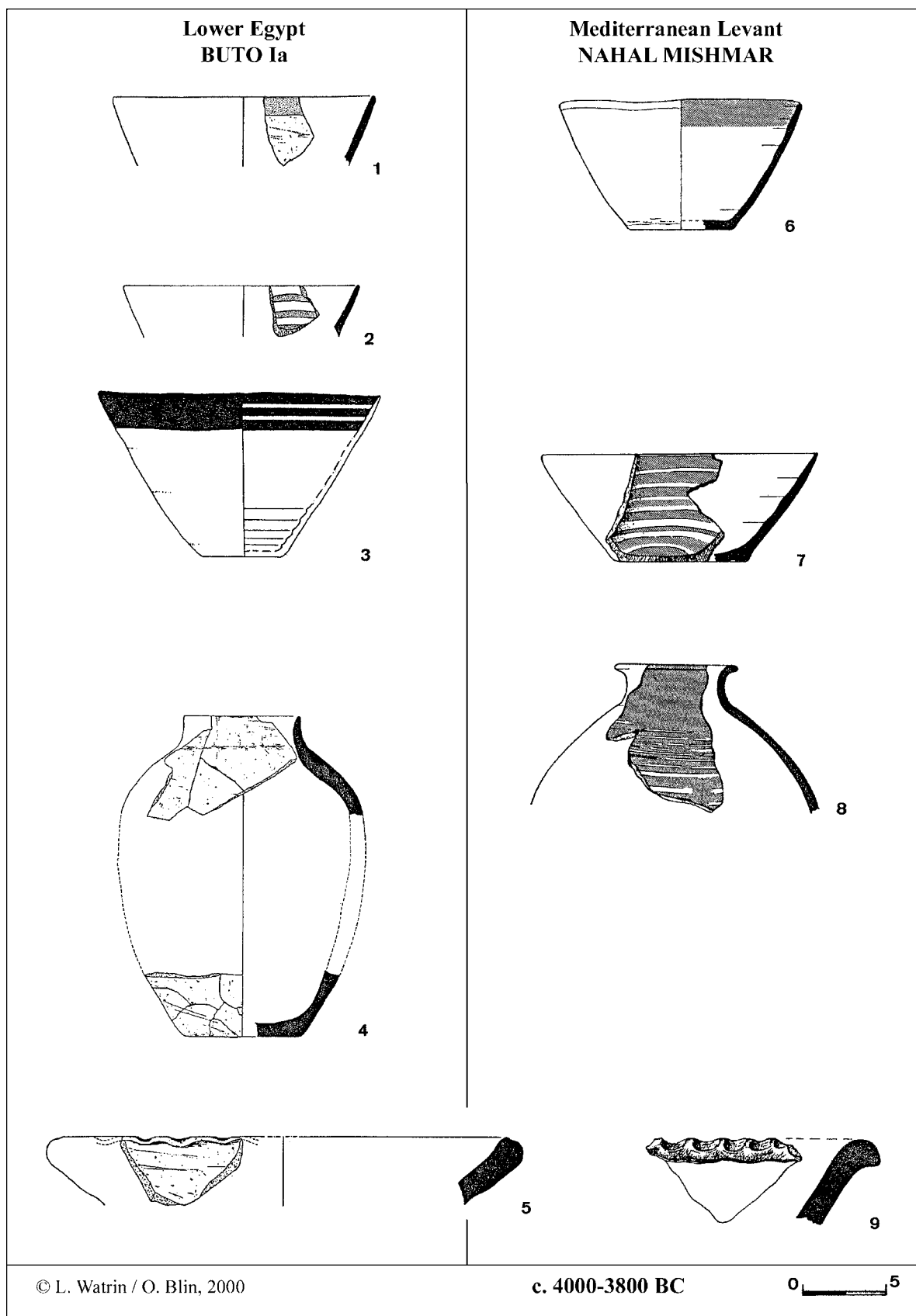


FIGURE 1.

logically similar to those of the contemporary period in Palestine, such as the ceramics from Nahal-Mishmar (fig. 1: 6–7).¹⁶

The comparison of the two following Buto Ia ceramic types, e.g., the crude non-thrown ceramics (black burnished globular jars fired by oxidation-reduction in the open air, Lower-Egyptian tradition) and the fine thrown ceramics (red-brown ware fired by oxidation in furnace, Palestinian tradition) allows us to confirm that both productions were made out of the same type of local Nile Clay¹⁷ as raw material. In both cases, we also notice the presence of quartz and mica grains (sand).¹⁸

In Palestine, the “V-shaped bowls” make up around 50% of the ceramic sets found in settlement contexts¹⁹ and present characteristics similar to the above mentioned Buto ceramics: thrown on a wheel out of a fine clay and bearing sand minerals (quartz).²⁰ Their function was purely domestic.²¹

Such facts yielded for the early Buto period force us to reconsider the notion that the use of the potter’s wheel and furnace firing at high temperatures were totally unknown to Lower-Egyptians. Two hypotheses may explain this phenomenon: either Levantine craftsmen living at Buto may have manufactured these vessels,²² or a local population having integrated this technology made them. The idea of thrown and high-fired vessels being manufactured by Egyptian locals is however somehow problematic since the said technological advancements did not last for very long. As the matter of fact during the following sequence of Buto Ib the technique of thrown ceramics gradually disappears. There shapes seem to have been kept but the manufacturing process reverts to that of other northern Egyptian ceramics (organic temper and not thrown on a wheel).²³

The hypothesis that a foreign population settled temporary in Buto and starting production of the artefacts seems therefore a more acceptable one. Consequently, considerations would have to be made in order to identify a population of Palestinian origin settled from the beginning of the fourth millennium in this location of the Nile Delta. Indeed, such a situation would not be a unique, since “culturally Palestinian” Chalcolithic artefacts (“pie crust rim” vessels), made in local clay, artefacts that are also present at Buto Ia have been discovered

16. Bar-Adon 1980: 142, 1–6.

17. We had the opportunity to see the material on the Buto site thanks to D. Faltings who also identifies the foreign ceramic from Buto as being of local manufacture (Faltings 1998b: 32).

18. The distribution of quartz particles is homogeneous as is their size, which suggests that those particles were mixed in the original clay rather than added afterwards as a temper. Porat’s petrographical analysis on the Buto material did not include sherds of V-Shaped bowls (see Porat 1997). On the other hand, she had at her disposal other jar fragments typologically “Palestinian” from Buto I, with a matrix containing silt similar to Nile clay with mineral temper made of phosphorite. According to Porat, this temper gave a light color to the pottery, trying to imitate the imported jars. Other ceramic vessels, made of calcareous clay with well sorted sand-size quartz, are indeed imports from Palestine (Way 1997: Pl. 44, 16) (this article, Pl. 1, 4).

19. We use some preliminary results from the rescue excavation of Horvat Raqîq in the Negev (Dagan 1998 personal communication). This figure is similar to those obtained on other sites in the Wadi-Sheva (Perrot 1998 personal communication).

20. Gilead and Goren 1989: 7.

21. It is advisable to point out Roux and Marty’s curious “analysis” (Roux and Marty 1997: 40–1) who presents these bowls as worship artefacts.

22. As suggested by Faltings (1998b: 32), who agrees with our own conclusions (Watrin 1997: 33–4 and Watrin 1998: 1215–1218).

23. Faltings 1997: 6.

at Mendes,²⁴ a site located some 80 km to the south-east of Buto, in the north-eastern Delta. The variations of the geological parameters since the fourth millennium²⁵ (land elevations due to fluvial deposits of sediment, and a more southerly coastline for the Delta) suggest that Buto and Mendes were both near to the sea shore, and probably ports. Itinerant Palestinian traders, travelling by sea or land routes, may have been part of an organised trading network involving Palestinians permanently established in the Delta.

Concluding on this matter will probably only mean setting further question marks. We have to ask what happened to the potter's wheel, why such an innovative and useful technology disappeared? Did Palestinian-Delta populations abandon this technique, or did Egyptian-Delta populations fail to adopt it? Should one follow D. Faltings's lead in seeing a phenomenon of acculturation of foreign populations,²⁶ in this case the regression of the Palestinian populations to the lesser advanced Delta culture? To a certain extent this can appear paradoxical since in the case of technological innovation usually lesser developed population tend to take over the novelty. It is possible that the Palestinian-Delta groups were autonomous entities whose technology, and even ceramic productions, were diffused on a limited scale among specific groups. In weighing these possibilities concerning the abandonment of the potter's wheel, we recall that the shapes of the Palestinian models were kept and adapted to non-thrown techniques in the next phase (Buto Ib).²⁷

One scheme that would explain both the abandonment of the wheel by the Palestinian-Delta populations and the non-adoption by the Egyptian-Delta populations is that the Palestinian groups may have brought their technology for their own use, and then left for Asia or elsewhere; leaving behind for the Egyptian populations samples of their ceramics, but without having transmitted their know-how.

The emergence of copper metallurgy

Would it be for Anatolia or Iran, the current knowledge on hand spots copper work, around 6500 B.C.,²⁸ with the production of small copper objects, by hammering out small nuggets of copper ore. These productions anticipate the first appearance of mould-cast copper by around a thousand years.²⁹ In the Levant, small-scale metallurgy in an open mould was practised in southern Palestine (Wadi-Sheva) in the last third of the fifth millennium, as testified by slags, ore, crucibles, furnaces, and copper tools such as those discovered at Abu-Matar³⁰ and Shiqmim II (ca. 4200–4000 B.C.).³¹ On the opposite in Ghassûl (layer IV) were found copper tools (axes)³² but no evidence of local production. As noticed by J. Perrot,³³ the Feinan copper mines, located some 100 km from the above mentioned sites, were most prob-

24. Friedman 1992: 204.

25. Butzer 1976: 23–24, Fig. 4.

26. Faltings *In press*.

27. Faltings 1998b: 32.

28. Müller-Karper 1994: 53. We also note that layer VI-A at Chatal Hüyük (dating from the sixth millennium according to Mellaart) reveals small artefacts in copper (rings and beads) and probably slags (Mellaart 1971: 52, 209, 217–218).

29. Huot 1989: 20.

30. Perrot 1955: 79–80. Perrot 1957: 18–19. Perrot 1972: 428–431, Fig. 849.

31. Levy et al. 1991: 38. Levy 1992: 351.

32. Mallon et al. 1934: 75, Pl. 34: 2.

33. Perrot 1957: 32.

ably the source for copper ore used in the making of copper tools such as axes³⁴ in the Chalcolithic villages.³⁵

Besides tool production at Abu-Matar³⁶ and Shiqmim II³⁷ we also find ornamental items (including sceptre heads) made of copper/arsenic alloys cast by lost wax techniques. Those objects, surprisingly, do not match the above-mentioned local slags and crucible fragments found on the sites.³⁸ Comparable objects have been found near the Dead Sea at the Nahal Mishmar cave.³⁹ In another cave at Nahal Qanah (Cisjordan),⁴⁰ eight ring-shaped items made of gold and electrum cast by open-mould weighing, 125 g on average, have been discovered. These findings (Fig. 2) suggest an advanced state of metallurgy at the period. The treasure of Nahal Mishmar (a copper hoard composed of lost-wax prestige objects, “crowns”, sceptres, maceheads, as well as open-mould axes) has often been attributed to cultures outside Palestine.⁴¹ Though the recognition of a local production is not unreasonable as we know that the Palestinian population already masters mould-cast copper metallurgy in the Chalcolithic (the utilitarian objects are of a very pure copper).⁴² The ornamental items were obviously meant for a different social stratum. Such fine lost-wax craftsmanship can only have been made by very specialised artists, and if made locally, would have been made with imported arsenic.⁴³ Indeed, the notion that these rich objects were locally made is supported by analogies between these material and Chalcolithic ceramic productions from Palestine. Several decorative elements (birds, ibexes and horns, globular jars with handles and decorative lines) indisputably represent the same range of symbols as in local Palestinian ceramics.⁴⁴

In comparison, no such advanced techniques exist in the Nile Valley during the same period. The contemporary sites in the Delta (Merimde, El-Omari, Buto Ia) as well as those in the South (Badari and Naqada I cultures) ignore the casting process since the only metal ob-

34. Shiqmim II (see Levy and Shalev 1989: 359; 357; Fig. 2: 3).

35. However, to date, the earliest traces of mining concern and smelting at Wadi-Fidan 4 in Jordan (Adams and Genz 1995: 8–20) are only dated from Early EB I (ca. 3700/3650 B.C.). For the chronology of Wadi-Fidan 4, see Watrin 1998: 1218, Note 33. For the chronology of the EB I in Southwestern Palestine see Yekutieli (2001: 129–152).

36. Perrot 1957: Pl. 1, no. 4; 27, Fig. 23–4.

37. Levy and Shalev 1989: 357, Fig. 2: 1.

38. Levy and Shalev 1989: 355–59.

39. Bar-Adon 1980.

40. Gopher and Tsuk 1991. This cave, as well as that of Nahal Mishmar, was also inhabited during the following period (EB I). The Nahal Mishmar cave yields at least one sherd of wavy ledge-handled jar clearly dated from EB I (Bar-Adon 1980: 149, 1). The chronology of the archaeological deposits thus becomes suspect. In this sense, it is probable that a part of the organic samples—curiously establishing radiocarbon datings which are too much recent for the Chalcolithic—have to be linked to EB I.

41. Perrot (1995: 58–59) thinks that the objects of prestige of Mishmar are imported from the Caucasus or Azerbaidjan. Miroschedji (1971: 18, Note 33) thinks that all the objects from the Mishmar treasure are of a non-Palestinian origin. For others, on the basis of some rare trace elements (like arsenic) of unknown origin, only the copper ore would be imported from the Caucasus (Mazar 1990: 73). Lastly, for Yakar (1989: 347, 1) these objects were locally made by coppersmiths who were familiar with the iconographical patterns and the smelting process from Southern Turkmenia.

42. Perrot 1957: 18, Note 1.

43. This analysis is closely akin to Mazar’s (1990: 75).

44. The bird patterns appear on a basket-handled spout bowl from the Negev (Amiran 1986: 84, Fig. 1). Horn elements also appear on the ceramic ossuaries from Bené-Berak (Perrot and Ladiray 1980: 141–142) and on jars from the Golan (Epstein 1998: Pls. XXIII–XXIV).

jects found are in the shape of small copper tools such as awls and pins made by hammering techniques. Since there is no evidence of imports of copper tools from Chalcolithic Palestine of this period, and since these cultures did not learn casting techniques, we can suppose that the Egyptian populations were not part of the principal eastern trading networks dealing with metal at the time.

In Egypt, the earliest cast-metal objects were discovered by M. Amer and I. Rizkana at Ma'adi.⁴⁵ This site of the southern Delta is contemporary with Naqada Ia–IIa, thus with most of Early EB I (EB Ia1),⁴⁶ around 3800–3500 B.C.⁴⁷ The debate which emerged from these discoveries (ranging from W. C. Hayes⁴⁸ supporting the idea of a metallurgy centre to J. Seeher⁴⁹ refusing the notion) is called into question upon review of the copper artefacts discovered during those excavations. In addition to the manufactured tools, Ma'adi has also forwarded copper ingots of different shapes, as well as copper fragments that we found during on-site survey⁵⁰ (that have been identified as the excess of the moulding process), and most importantly the presence of a copper axehead that was not refined after casting and what is possibly a smelting oven.⁵¹ Such elements (Fig. 2) downplayed by recent authors (such as Seeher) appear as proofs of a metallurgical activity at Ma'adi.⁵² Furthermore, we point out the rarity of stone axes,⁵³ which are omnipresent on the earlier settlements of Merimde and El-Omari. This phenomenon is complemented by the total absence of bone hooks (to-date on the 40.000 m² of the site that have been explored). In contrast, we have metallic productions such as square-sectioned fishhooks, needles, and what may be weights.⁵⁴ The use of copper tools and other objects appears as usual at Ma'adi, even if the quantities discovered are limited (excavators nonetheless frequently note traces of disintegrated copper artefacts). M. Amer and I. Rizkana⁵⁵ also noticed that the remains of wooden posts from dwellings were cut and squared in a way that could only have been done by metal tools. In the absence of undeniable archaeological traces (copper workshops, moulds, etc.), it is true that we cannot be absolutely sure that copper was transformed on the site. However, the site did yield a lot of copper ore, including a chunk weighing 15.7 kg.⁵⁶ J. Seeher leans toward the use of the ore as a colouring agent.⁵⁷ The presence of ingots, even imported, as well as the copper axe-head spoiled in casting may be proofs of metallurgy (they were cer-

45. Rizkana 1966: 493–515.

46. Watrin in press c.

47. As the ceramics imported from Palestine have been discovered in the lowest layers of the site of Ma'adi (Rizkana and Seeher 1987: 57), as they are typologically linked to the very beginning of the EB I and as the whole radiocarbon data of Ma'adi have yielded an absolute chronology of 3800–3500 B.C., it is advisable to put the opening of the Bronze Age in Palestine much earlier and to set it between 3800 and 3700 B.C. (Watrin in press f), even earlier than we had thought (Watrin 1998: 1218–1219; we had already placed the opening of the EB I one hundred and fifty years earlier than the traditional 3500 B.C., setting its opening toward 3650 B.C.).

48. Hayes 1964: 128–129.

49. Rizkana and Seeher 1989: 13–18.

50. Watrin 2000a: 163–184.

51. Dittmann 1936: 158.

52. Trigger et al. 1983: 25–26.

53. Badawi Afifi has recently informed us about the discovery of an important deposit of stone axes at Ma'adi-West.

54. Rizkana and Seeher 1989: 17–18–19.

55. Menghin and Amer 1932: 48. Rizkana 1966: 493–515.

56. Rizkana and Seeher 1989: 17.

57. Rizkana and Seeher 1989: 18.

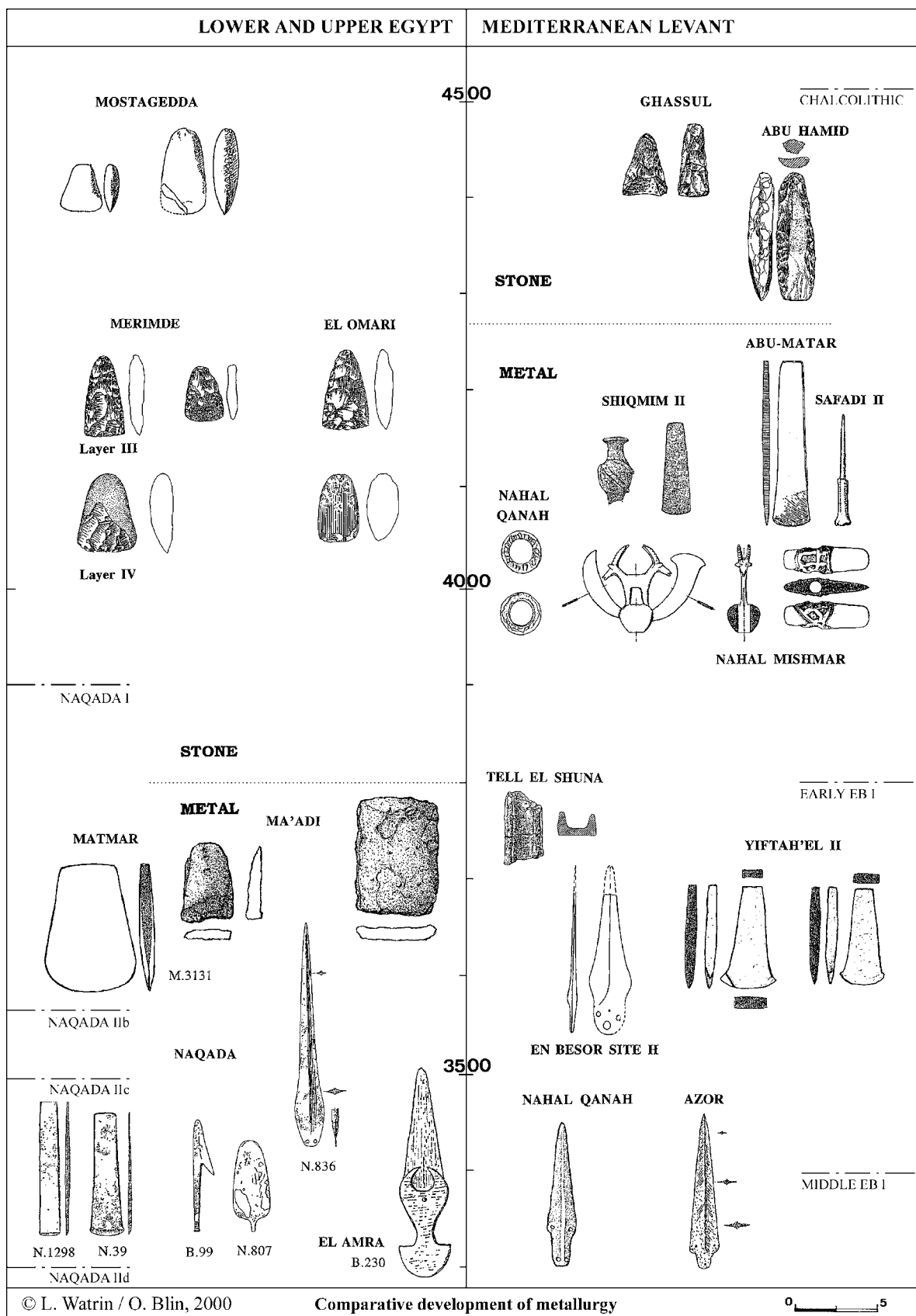


FIGURE 2.

tainly not colouring agents). It is also difficult to see this spoiled axe-head as an imported ingot, as Seeher does. Ingots tend to be typologically identifiable and generally delivered in specific forms and weights (two shapes have been recognised at Ma'adi, rectangular and convex-oval, all weighing around 830 g). If we suppose against all likelihood that the "axe-ingot" was imported to Ma'adi from elsewhere, we can so far only deduce that it was exclusively for a purpose of re-casting on site.

In the regions peripheral to the Delta (southern Palestine), the transformation of copper, already practised in Chalcolithic villages from 4200 B.C. onward (see *supra*) throughout the beginning of the Bronze Age (EB Ia1, ca. 3750–3500 B.C.) as demonstrated by traces of activity at the mining sites of Wadi-Feinan⁵⁸ and the remains of axe-moulds and ingot moulds discovered on the settlement of Tell el-Shuna,⁵⁹ located at 150 km to the north of the mines. Early EB I metallurgy is also underlined by traces of metallurgical workshops in the earliest layers of Afridar,⁶⁰ on the southern coastal plain of Palestine, along the trade routes leading to Lower Egypt.

The said Early EB I Palestinian settlements and Ma'adi's one are contemporary of each other. They used to exchange a range of products with the southern Delta.⁶¹ This reality in turn raises the question of the origin of metal objects at Ma'adi. In that frame we can at first underline the fact that the typology of the Ma'adi copper axes is similar to Neolithic stone axes from Egypt (Merimde, El-Omari),⁶² and different from Palestinian models. Recent metallographical analyses conducted by E. Pernicka and A. Hauptmann on these objects⁶³ show that the copper ore source is Palestinian (Feinan in Jordan being the most probable origin). The specificity of the Ma'adian axe model, in shape of Egyptian tradition rather than Palestinian one, may indicate a genuine local production. In the case of the ingots discovered on the site, we are probably dealing with raw materials for local metallurgical production. It is the absence of Palestinian types—neither imported nor copied—that gives rise to the following hypothesis: copper technology, brought from Eastern regions by craftsmen possessing the know-how, was introduced into Lower Egypt and latter developed in response to local demand, copper replacing conventional stone or bone used in traditional object manufacturing. This scheme may be illustrated by the discovery of a copper axe-head at Matmar tomb 3131 dated Naqada Ic,⁶⁴ axe of a Ma'adian shape but twice as big (Fig. 2), which may illustrate the existence of North-South trade during that period, furthermore confirmed by the presence in the same tomb of a Palestinian jar dating from Early EB I.⁶⁵ This discovery is not an isolated one, since another tomb at Naqada from the same period (N 1759, Naqada Ic),⁶⁶ has yielded a small Palestinian spout jar⁶⁷ of rough clay—possibly wheel-made—with incised pattern round its neck, associated with metal (a copper pin).

58. Adams and Genz 1995: 8–20.

59. Rehren, Hess and Philip 1997: 625–639. Berlin. The smallest of them could be an axe-mould and the biggest an ingot-mould of the type of those discovered at Ma'adi (the form and the dimensions being indeed identical).

60. Yekutieli (1998 personal communication).

61. Watrin In press c.

62. Eiwanger 1992: Fig. 14, Pl. 59–67. Debono and Mortensen 1990: Pl. 15–6.

63. Pernicka and Hauptmann 1989: 137–141. De Morgan 1926: 212.

64. This tomb is generally erroneously dated in Naqada II (e. g. Seeher 1991: 315; Hartung 1994: 108, Fig. 1).

65. This jar has to be compared to a specimen from Biq'at Nimra (see Sebbane and Avner 1993: 34, Fig. 3). The synchronism Naqada Ic = Early EB I (EB Ia1) can therefore be established instead of the vague synchronism Naqada II = Early EB I (e. g. Harrison 1993: 81).

In the light of above facts it appear that the north of Egypt, with its long relationship with the East, acquires at a very early stage (in a period contemporary with Naqada Ic–IIa [ca. 3650–3500 B.C.] and Early EB I [EB Ia1⁶⁸]) metallurgical technology and probably distributed the resulting manufactured products further around (i.e., Matmar axehead). This advance in technology for the Delta may have ended with Ma'adi, since later Delta sites such as Buto IIa yield no significant evidence of metallurgy.⁶⁹ Likewise, the south of Egypt acquires only much later (Naqada IIb–d, ca. 3450–3300 B.C.) such copper weapons like riveted blades (Fig. 2),⁷⁰ whose identical counterparts are found in Palestine, in contemporary or earlier contexts (Early EB I riveted blade from 'En Besor-Site H).⁷¹ It is likely that these weapons were imported from Palestine. The origin of chisel-shaped axes in Upper Egypt, which appear in cemeteries beginning in Naqada IIc⁷² (ca. 3400 B.C.), is difficult to establish⁷³ (Fig. 2). For other metallurgical productions such as copper harpoons⁷⁴ (which also appear around Naqada IIc, Fig. 2), of which bone versions exist already among the local manufacture, it is likely that Upper Egypt produced them locally.

The development of stone and mud-brick architecture

Again, the site of Ma'adi, best illustrates the Palestinian influence on the Lower Egyptian cultures. In Palestine, at the beginning of the fourth millennium, the scheme of architectural evolution shows a change from rectangular-shape architecture which marks the Late Chalcolithic cultures, to a sub-rectangular architecture with rounded edges on the ex-

66. Petrie 1896: Pl. XXXVI: D 92; Petrie 1921: Pl. XXXVII: D 92. Baumgartel 1970: Pl. LVI; Baumgartel 1955: 92–3, Fig. 37: 4.
67. This jar has to be compared to a specimen from Tell el Farah north (tomb 12) (De Vaux 1951: 584, 12: 2. Amiran 1970: 44–45, Pl. 9: 13).
68. Watrin In press c.
69. The only copper artefact in this phase is a pin (Way 1997: Pl. 55: 16).
70. A specimen in Naqada Tomb 836 (dated Naqada IIb by Kaiser) (Petrie 1896: Pl. LXV: 3). We shall note that tomb 836 contains resin lumps as well, which might be a product imported from Palestine (Baumgartel 1970: Pl. XXXI). The chronology of this tomb set by Kaiser in Naqada IIb (Kaiser 1957: Pl. 22) is complex as it does not contain any pottery. It belongs to a group of three tombs: one of them has not been recorded (838); the second one (839) can only be estimated around Naqada IIb–d because of the presence of only one vase of the D 67 j-class belonging to the three sub-phases. The (836) tomb may then be much later. In this way we find two other riveted blades at El-Amra in tombs a 131 and b 230 dated Naqada II d1. (Randall-Maciver and Mace 1902: 40, Pl. VI and X).
71. Macdonald 1932: Pl. XXVII: 74; Pl. XVIII: 1.
72. Naqada tombs 39 and 1298 (Petrie 1896: Pl. LXV: 5–6). It is impossible to determine the chronology of the chisel-shaped copper axes discovered on El-'Adaima settlement (3 specimen) by De Morgan (Needler 1984: 278–283: no. 180 and 182) and Midant-Reynes et al. (1998: 290, Fig. 15). The excavators give no precise indication about the stratigraphy and the chronology of these finds. In comparison to similar specimen in well-dated contexts, a chronology around Naqada IIc (Naqada IIb–d1) might be estimated.
73. We shall note that the copper axe-head from tomb 1298 was associated to Palestinian jars with loop-handles (an imported jar classified W 2b by Petrie) and that its particular shape is comparable to the most ancient Palestinian productions; this detail had not escaped Hennessy (1967: 33).
74. Naqada tomb B 99. Petrie 1896: Pl. LXV: 7–8. The copper harpoon from B 99 (Naqada IIc) was associated to a specimen of harpoon made of bone and to a stone fish-shaped palette (a fisherman's tomb?) (Petrie 1896: Pl. LXI: 15). Another copper harpoon is known in Naqada T 9 (Naqada II d1) and at Minshat 1a (MAO 761) (Kroeper 1988: no. 54).

terior and the interior at the beginning of EB I. This transition is particularly visible in sites such as Meser, where the two phases and shapes are present and superposed.⁷⁵

In Egypt, the Neolithic, then Chalcolithic villages are made up of dwellings with wooden post supports which in some cases, such as in Ma'adi, show a semi-subterranean basement whose walls consist of load-bearing wooden pillars, and sometimes of stone or mudbrick. In the western part of the settlement an exceptional structure has been unearthed accompanied by archaeological material allowing to situate the structure in a recent phase of the Prehistoric village. This structure (Fig. 3) discovered by F. A. Badawi,⁷⁶ is a semi-subterranean subrectangular chamber with rounded edges inside and outside. The outside measurements of the structure are 10.5 by 5.5m. It is made out of stones stacked with clay mortar, the inner walls covered with several layers of mudplaster. The ground shows traces of chalk and is pierced by three pits regularly arrayed on a longitudinal axis, intended to receive the massive wooden pillars to support a roof, or perhaps a second floor. Entry is gained by steps carved in the bedrock leading to a door found in the northeast angle. We point out the presence of a recessed niche in the same wall. The architectural typology of this building, to-date unique in Egypt, is directly related to the Early EB I of the Southern Levant (Fig. 3). The excavations conducted by R. Saidah at Sidon-Dakerman in Lebanon,⁷⁷ by J. C. Tresgeres at Djebel-Mutawwaq (Jordan)⁷⁸ or by E. Braun at Yiftah'el in Lower-Galilee,⁷⁹ reveal a "sausage shape" architecture with dimensions similar to those of the construction at Ma'adi West. More close parallels can be found in the recent excavations directed by H. Khalaily and Z. Wallach at Afridar in southern Palestine, which have yielded several similar buildings of sub-rectangular shape.⁸⁰

The uniqueness of the Ma'adi structure lies in its semi-subterranean aspect, which is typical of the earlier, traditional architecture also present on the site. We might mention that the Ma'adi semi-subterranean structures are not related to the subterranean structures of Wadi-Sheva, an ill-conceived mirage on both chronological and structural levels that is often projected by scholars.⁸¹ The structure excavated by F. A. Badawi presents influences of foreign architectural models from the EB I period, in both typological and structural aspects (sub-rectangular shape, use of stone, chalked floors, mudplastering), while adapting to the traditional model current at Ma'adi in this period and which is characterized by the presence of a semi-subterranean space within the settlement.

The architectural quality of this building bears strong similarities with one of the other Ma'adian semi-subterranean structures with a roughly rectangular form and with walls of mixed brick and stone construction, from a slightly earlier period.⁸² The comparison of these structures suggests that the mentioned building is the work of an architect who mastered the techniques known at the same period in Palestine.

75. Dothan 1959: 15. Watrin and Blin In press.

76. Badawi Afifi 1987: 59.

77. Saidah 1979: 29–76.

78. About 250 stone dwellings in "sausage shape" similar to those of Sidon-Dakerman have been recently discovered at Djebel Mutawwaq (1998 Nicole and Humbert personal communication).

79. Braun 1997.

80. Khalaily and Wallach 1998: 100–101, 154.

81. E. g. Seeher 1990: 129. Levy 1992: 353. On the hazardous comparisons made between the semi-subterranean structures of Ma'adi discovered by M. Amer and the Chalcolithic subterranean structures of the Wadi-Sheva, see: Watrin 1995: 67–72; Watrin 1998: 1215; Watrin In press c; Watrin and Blin In press.

82. Badawi 1954: 8, Fig. 8. Watrin and Blin In press.

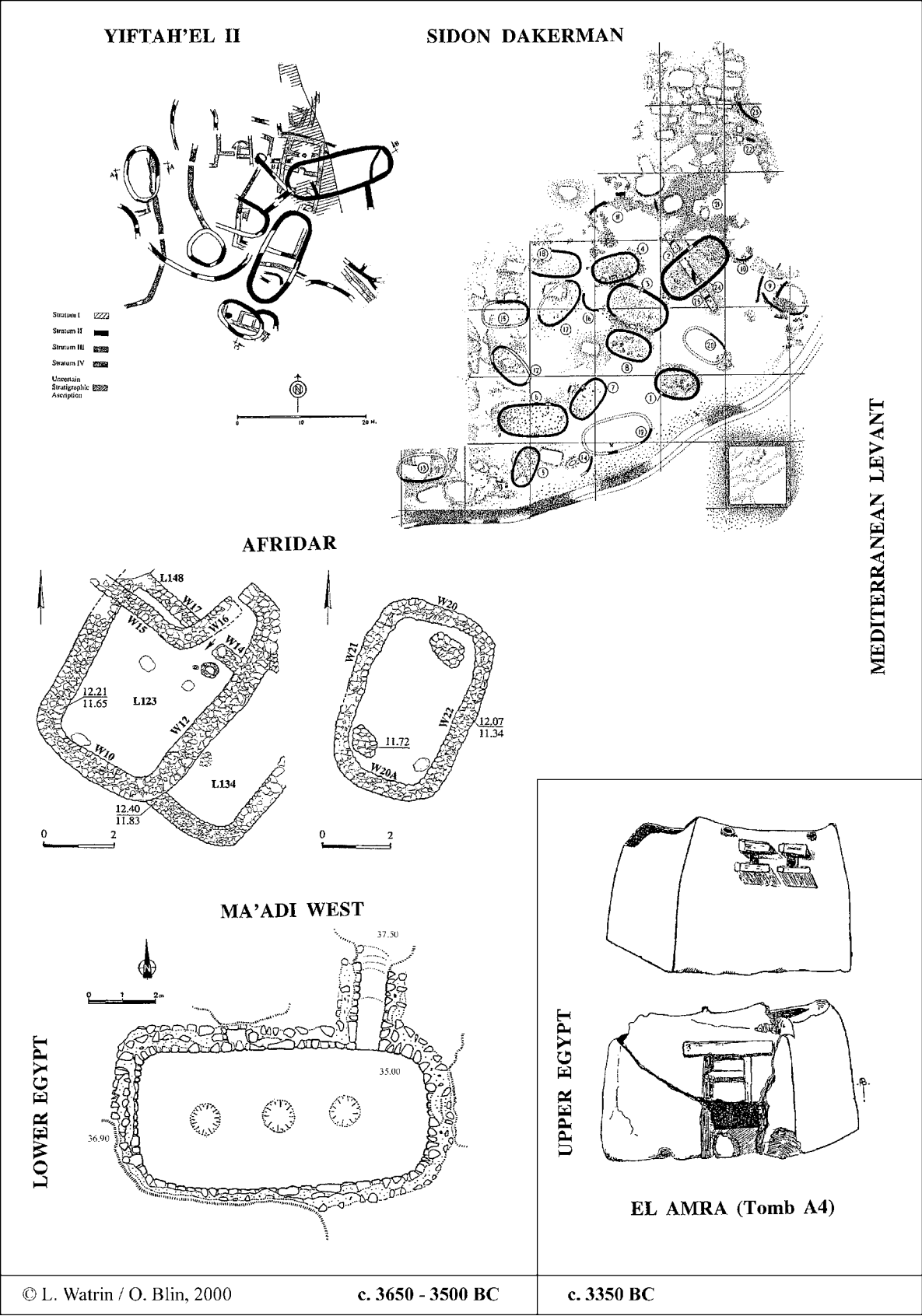


FIGURE 3.

As to the origin of brick architecture in Egypt (in Palestine the mudbrick is used at least since the fifth millennium as we can see at Ghassûl)⁸³ this technique appeared in Naqada IIc-d1 in the south of the country, as shown by the decorated tomb of Hierakonpolis (tomb 100).⁸⁴ Concerning domestic constructions, we can also notice, in the same area, the tradition of rectangular buildings erected with wattle and mud as illustrated by a clay model of a house (Fig. 3) from El-Amra tomb A 4⁸⁵ (Naqada IId1). In the light of the chronological evidence forwarded by the Ma'adi site, the question of the origin of the mudbrick in Egypt may be reassessed. In fact, one of the semi-subterranean structures found on the eastern side of the settlement presents a construction associating stone and mudbrick.⁸⁶ The mudbricks are topping one of the walls of the structure which may be dated to Naqada IIa (final Ma'adi) at the latest. The use of mudbrick in this settlement inclines us to place the beginning for the Egyptian use of mudbrick architecture at an earlier timeframe, well before Naqadan spheres,⁸⁷ even if it is used here only sporadically, perhaps in the case of a repair. Globally all these remarks are raising the question of the origin of populations who were living on this site, and more generally in Lower Egypt, and who were capable of mastering techniques and models that did not belong to the local tradition.

The cultivation of grapevine and the appearance of new types of containers for liquids

In the neighbouring regions of the Delta, more precisely Palestine, the analysis of flora and fauna data on hand demonstrates that the beginning of the Bronze Age (ca. 3700 B.C.) saw as well changes in agricultural practices associated with an intensification of animal domestication. In particular the development of arboriculture (grapevines and olive trees) together with the domestication of the donkey,⁸⁸ favoured the development of interregional trade.

In the western Delta, at Buto, a research led by U. Thanheiser⁸⁹ concerning the botanical remains discovered in the Buto phase II, a post-Ma'adian phase that we date to Naqada IIb-c⁹⁰ (ca. 3500–3400 B.C.), brought to light the presence of grapevine pips (*Vitis Vinifera*), which in turn suggests that the Delta practised viticulture, or at least imported grapes from Palestine where grapevines are sure to have been grown⁹¹ during Naqada IIc. The following phases (Buto III–IV) show a gradual increase in grapevine pips remains.⁹² These modifications in agriculture are furthermore marked by the appearance of new ceramic forms, found among the traditional ceramic sets, which derived from Eastern types.

83. Mallon et al. 1934: 32–36.

84. Quibell and Green 1902: 20–2, Pl. LXVII. The chronology of this tomb is much disputed (Naqada IIc or IId1) (see Watrin in press e).

85. Randall-Maciver and Mace 1902: Pl. X: 1–2.

86. Rizkana and Seeher 1989: 54, Fig. 18, Pl. XV: 1–3.

87. In the Nile Delta, the use of brick in dwellings appears again currently in Naqada IIIa as in Buto III f (van den Brink 1989: 79).

88. Ovadia 1992: 19–28.

89. Thanheiser 1997: 238–250.

90. Watrin 2000b.

91. These plants are indigenous to Palestine as a result, the local population has benefited from olive and grape very early.

92. Thanheiser 1997: 244–249.

Beginning of Naqada IIc, we see an influx of Eastern ceramics in Upper Egypt (Fig. 4). On most of the Naqadan sites, we find “spout-vessels” of the F 58 type.⁹³ At Naqada we find these models in three Naqada IIc tombs (F 58a in N 421 and N 1211; F 58p in N 1886).⁹⁴ These vessels, appearing regularly in Upper Egypt (e.g., at Naqada IId2 in el-Mahasna tombs H 123 and H 131a)⁹⁵ were either imported from the East (most likely from Mesopotamia—Uruk IV period)⁹⁶ or were imitations. We find this “Urukian type” spout-jars in Egypt at least until Naqada IIIa2 as testified by two specimens found in Salmany tomb 49 near Abydos.⁹⁷ The analysis made on this type of serving vessels at Uruk shows that they contained wine.⁹⁸

During Naqada IIc, another type of liquid container, the loop-handled jar (Fig. 4), appears in the ceramic collections of Upper Egypt (e. g. Naqada tombs 1246 and 1298).⁹⁹ This container is clearly imported from Palestine where parallels are found (notably at Arqub el-Dhahr),¹⁰⁰ but the lack of analyses does not allow the determination of their contents.¹⁰¹ This type of jar continues to be imported regularly during Naqada IId–IIIa, notably at Abydos (U-j tomb), whose analyses have shown that they contained wine.¹⁰²

Likewise during Naqada IIc, a key-item for this period was discovered in Upper-Egyptian tombs (e. g. El-Amra tombs a 6 and b 166),¹⁰³ namely the wide-bodied jars with wavy/indented ledge-handles (Fig. 4), a liquid-container of Palestinian origin (parallels in the Middle EB I tombs at ‘Ay).¹⁰⁴

Alongside such Palestinian imports was unearthed a range of locally produced wavy-ledge-handled jars,¹⁰⁵ some of which are direct copies of the Palestinian types (W 3)¹⁰⁶ and others belong to a new category of ovoid (narrow-bodied) wavy-ware containers whose relationship with their north-eastern ancestors are manifest among the wavy-ledge-handled (types W 4–8–14–19). Found only in the southern spheres, the Naqadan wavy-ledge-handled

93. At Naqada IIc-d other forms deriving from Palestinian models appear in the Naqadan ceramic sets (knobbed-bowls type F 5) (see Kantor 1942: 174–213). We shall also note that the earliest example of spout vessel in Upper Egypt (Fig. pl. 4), in rough ware with one line of incised decoration below the rim comes from Naqada tomb 1759 (dated Naqada Ic) (Petrie 1921: Pl. XXXVII, D 92). In all likelihood, it is an imported pot from Lower Egypt (e. g. Ma’adi) or from Palestine. It is a very different pottery from later F 58 which seem rather linked to the Urukian sphere (Pl. 4).

94. We also find them in three other (non-datable) tombs of Naqada (N 35, N 145, N 1108) (Baumgartel 1970).

95. F 58e. Ayrton and Loat 191: 24, Pl. XXXVIII.

96. Lacking petrographical analyses of these jars, we must wonder if these spout-vessels originated directly from the Mesopotamian sphere (Mark 1997: 23–25) or are they imported from or inspired by Levantine models? (Bahnam Abu Al-Soof 1980: 133).

97. Abdullah el-Sayed 1979: 282, Fig. 14, 49/1 and 49/2.

98. Badler et al. 1996: 39–43.

99. Vases classed W 2a and W 2b by Petrie (1921: Pl. XXVIII).

100. Parr 1956: Fig. 16.

101. We encourage P. Gouin’s study (University of Paris I, Sorbonne) on the question of the content of the EB I pottery.

102. Hartung et al. 1997: 10, Fig. 7.

103. Randal-MacIver and Mace 1902: Pl XIV: Wa.

104. Hennessy 1967: Pl. XX: 1. Callaway 1993: 42.

105. Kaiser estimates the percentage of this new form in the Naqada IIc ceramic sets to be 6%, pointing out that the W-class appeared in the end of the period (Kaiser 1957: 75).

106. We already mentioned (i.e., Watrin 2000b) that the first six vases from the Petrie W-class are imported jars from Palestine (W 1–2).

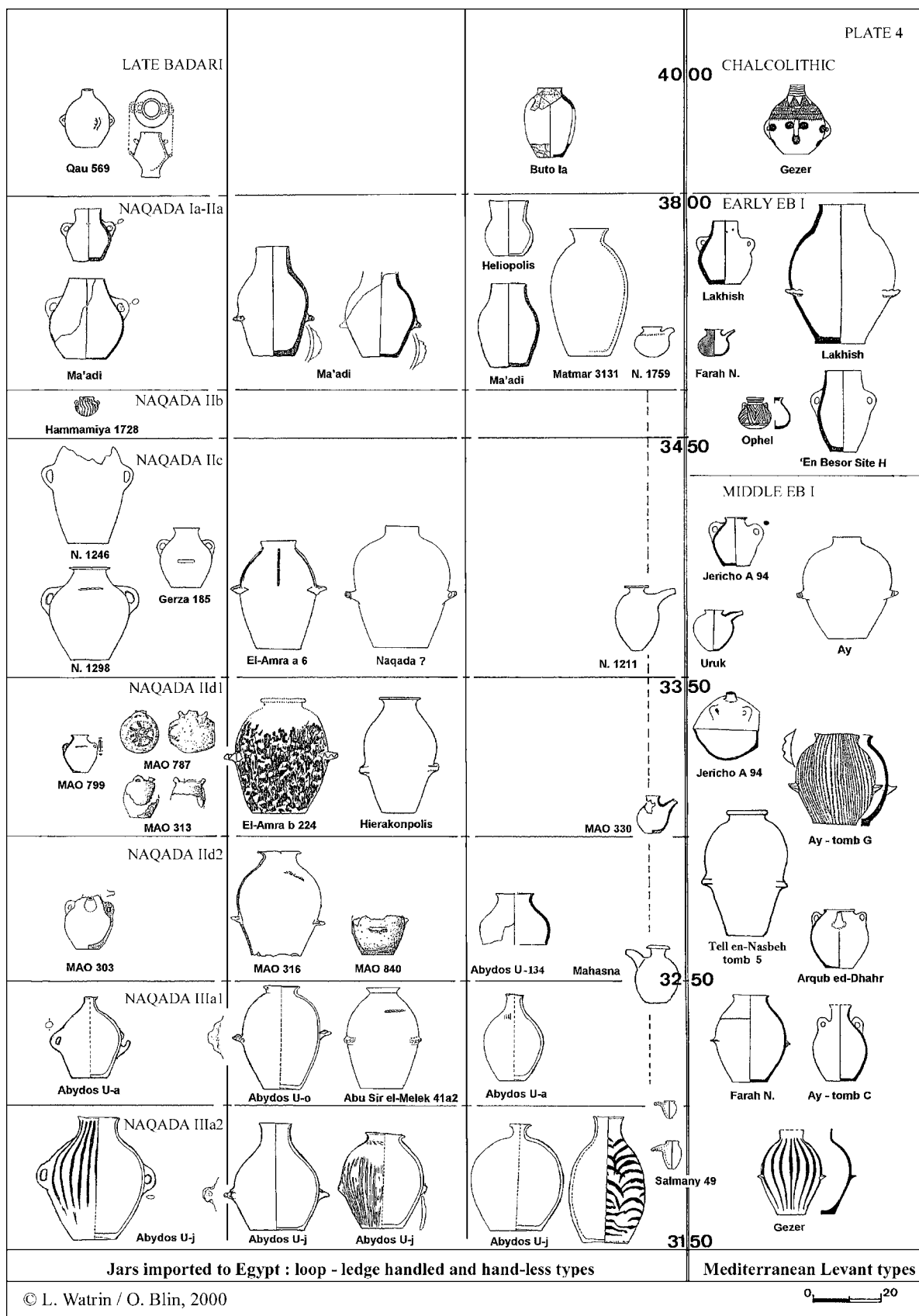


FIGURE 4.

adaptations developed considerably before reappearing transformed in Lower Egypt. It is only during the beginning of Naqada IId, at the earliest, that the Naqadan wavy-ware is found in the North in the form of types W 43 B-G-M (W 43 G and M types are smaller and have reduced handles), particularly on the site of Minshat Abu Omar I. The recent excavations at Buto have yielded several of these vessels,¹⁰⁷ in one of the many transition layers (in this case “phase II–IIIa”), preceding the “cultural transition layer” (phase IIIa). While no analyses determine what the derivative W 3 vessel may have contained, F. Petrie¹⁰⁸ remarks that the earliest types of W-class with a narrow body (W 4 to W 19, dated from Naqada IIc) contained vegetable fat. For the more recent models (W 43 dated Naqada IId, of which we find samples in some dozen tombs at Minshat I¹⁰⁹ and Buto II–IIIa)¹¹⁰ Petrie also noticed a “fatty matter” of some sort being contained (palm-oil according to his opinion). It seems that the same residues were found at Abydos in a later series (W 50–51) dating from Naqada IIIa.¹¹¹ Produced in Upper Egypt throughout Naqada IIc, these vessels travelled progressively northward during early Naqada IId at the earliest, but also in Nubia where a second generation of W-class wares, the W 24–26 (productions dated from Naqada IId1),¹¹² has been identified.

In Naqada IId, we find jars of classes W 24 and W 43b at Abydos (U-134 tomb),¹¹³ associated with a first shipment of bottles imported from Palestine (two samples). The Palestinian imports of that period (Fig. 4) continue to be identified in the Upper-Egyptian tombs and consist of ledge-handled jars (e. g. at Hierakonpolis,¹¹⁴ jar with a direct parallel in Tell en-Nasbeh tomb 5).¹¹⁵ In the Abydos region, at El-Amra (tomb b 224, Naqada IId1) we noticed that one of these vessels (classed W 1 G by Petrie) bears a “marbled” decoration,¹¹⁶ unknown to-date in Palestine. Other containers of medium size—loop-handled, ledge-handled and handle-less jars—have also been discovered in tombs U-a and U-o of Abydos¹¹⁷ (Fig. 4) with a slightly later origin (ca. Naqada IIIa1). In the eastern Delta, at Minshat Abu Omar I, the vessels imported from Palestine (Fig. 4) consist exclusively of bottles as liquid containers. In the earliest phase of the necropolis (MAO 1a, Naqada IId1) we find spouted-vessels or ring-

107. Von der Way 1997: Pl. 45–46. Another type of pottery with “thumb” indented-ledge-handle (uncommon jar, approximates to Petrie’s Corpus “W 47”) appears also in Buto II–IIIa (Way 1997: Pl. 4, 7–14; Way 1987: 246, Fig. 2, 2–5).

108. Petrie 1896: 38–40. See Kantor’s analysis (Kantor 1942: 178–182).

109. One W 43 B type (tomb 202) and nine models of the W 43 G and M classes in tombs 132, 133, 181, 231, 242, 661, 669, 751, 761 (see Kroeper and Wildung 1994). The dimensions of these vases vary between 26.5 cm (W 43b) and 14.8 cm.

110. Von der Way compares the Buto W-class to types W 22 and W 24 (Way 1987: 244). Like the W-class from Minshat I, those of Buto II–IIIa are closely akin to types W 43. In any case, they are dated in Naqada IId. The artefacts associated with the W-class of Buto II–IIIa are made up of pointed conical jars of the R-class (types R 76g or R 76p) which appear in Upper Egypt in Naqada IIc-d tombs.

111. Dreyer mentions oil or fat (Dreyer 1992b: 63). Dreyer 1998: 28.

112. E. g. Cemeteries 111 and 134 situated at the opening of the Wadi-Alaqui (Firth 1927: 98–99, Fig. 3).

113. Hartung 1996: 17.

114. Quibell and Green 1902: Pl. LXIX: 3. A content analysis is underway on this jar (Friedman 1996: 13).

115. Mc Cown 1947: Pl. 24: 1.

116. Some scholars have seen in this type of decoration an imitation of stone vases (Capart 1904: 111, Fig. 78).

117. Dreyer 1992a: 294–295.

handled ones, as well as other containers of the “keg” or “churn” types.¹¹⁸ Precise parallels for these pots exist in Palestine in Middle EB I contexts at Azor and Jericho.¹¹⁹ In more recent tombs (MAO 1b, Naqada IId2), we can spot once more the presence of imported containers with ledge-handles.¹²⁰ A comparable imported ledge-handled jar (Fig. 4) has emerged from a Naqada IIIa1 tomb at Abusir El-Melek.¹²¹ Jars of the same types—containing wine—have been found at Abydos (Fig. 4) in tomb U-j¹²² dated in Naqada IIIa2. Beyond yielding hundreds of small Egyptian vessels of the W-class (types W 50–51) containing oil or fat,¹²³ this tomb presented 390 culturally Palestinian jars¹²⁴ containing wine. About half of these jars were Palestinian imports (ledge and loop-handled jars), the other half, strangely bearing no handles, being of an unknown origin. Some containers (Hartung’s class 5) bear a white wash with painted vertical red stripes similar to the ones found for example at Gezer.¹²⁵ These jars were discovered in association with clay stamp-labels,¹²⁶ indicating that an administrative authority had recorded the ownership of at least part of this merchandise. Likewise, some 180 ivory labels¹²⁷ associated with funerary depots of tomb U-j frequently mention Delta localities (Buto, Bubastis).¹²⁸

In Upper Egypt during Naqada IIc, the spout-jar (wine pitcher of Urukian origin) and the ledge- and loop-handled jars (wares from Palestine of which slightly later models contained wine (U-j tomb)) were present in Naqadan trade circuits. Once the demand for one wine had been generated, major stocks of wine jars appear in the tombs of Upper Egypt, and particularly at Abydos, which is the main power-center of the Nile valley in Naqada IId-IIIa.¹²⁹ While part of these Naqada IIIa productions are sure to have been imported from Palestine (ledge and loop-handled jars), the unconventional bottle-shaped jars (either undecorated or tiger-striped) can not be linked to Palestinian sources.¹³⁰ Although no sherd of bottle-shaped jars has been found in the Delta, traces of viticulture in this region have been identified at Buto, which might suggest the manufacture of bottles (for wine) in the “wine-

118. Kroeper 1988: 37–40).

119. For example a parallel to the small-decorated churn from the MAO 787 tomb can be found in tomb 40 in Azor (Amiran 1985: 191, Fig. 1). Kenyon and Holland 1982: 121, Fig. 47, 2 (tomb A 94).

120. Kenyon 1982: Fig. 69–70.

121. Tomb 41a2. The combined presence of W 48, L 30k and L 36f permits us to date this tomb around Naqada IIIa1 (Scharff 1926: Pl. 45).

122. See Van den Brink and Braun 1997: 71–95.

123. Originally the number of containers of the local W-Class in U-j tomb, according to Hartung’s assessment, may have reached 800, thus a little more than the Palestinian jars which have been estimated at 700 (Hartung 1998: 21, 42–4).

124. Dreyer 1992b: 63. To the 373 Palestinian jars discovered by Hartung in U-j tomb (In Dreyer 1998: 97–107) we add the great majority of the 16 Palestinian ones excavated by Amélineau in 1896 (see Watrin *In press b*).

125. Seger and Lance 1988: 21, Pl. 5: 1.

126. Hartung 1993: 50–1. Dreyer 1998: 108–112, Pl. 26.

127. Dreyer 1998: 113–134, Pl. 27–35. Eleven other ivory labels discovered by Petrie around U-j tomb, must come from the same one (see Petrie 1901: Pl. III, 9–19).

128. Dreyer 1992a: 297–298, Pl. 6: 3–4. Wilkinson 1999: 41.

129. The hypothesis of a tribute paid by Lower Egypt and/or Palestine to Upper Egypt has been recently proposed (Watrin *In press b*. See also Watrin *In press e*).

130. A few bottles from the U-j tomb can be compared to a similar sample found in an EB I context in Jawa (see Helms et al. 1987: 35, 63, 223; Fig. 38; 313; Fig. 141; no. 418). According to Porat (*In press*) part of the Abydos jars can’t have been made in Palestine because of the igneous

growing” region of Lower Egypt.¹³¹ The hypothesis of a local wine market in Egypt at Naqada IIIa appears to be a plausible one. Thanks to the privileged relationship with the Delta populations and a mastery of arboriculture techniques from the beginning of EB I, Palestinian specialists certainly played a major role in the transplantation of grapevines from the Levant to the Delta, as well as in techniques of wine-making.

Conclusion

The points that we have examined (the introduction of the potter’s wheel, copper metallurgy, stone and mud-brick architecture, viniculture and the appearance of new containers) show that very early, beginning in Buto Ia and Ma’adi, technologies and influences originating in the East were introduced to Lower Egypt. The introduction of these technical and cultural elements seems to have left an uneven heritage. Some of them seem to have had no success (potter’s wheel, stone architecture), whereas others (metallurgy, mud-brick architecture, viniculture, and new ceramic shapes) marked the Egyptian culture deeply for the following periods. The sudden appearance of technologies and techniques totally unknown with traditional models of local societies forces us to consider such innovations as having a foreign origin. However the further development of those innovations on the other hand also points to the strength of the local traditions which adopted new models while adapting them to their needs and tastes: for instance the metallurgy of the Delta reproduces local forms that were initially stone made, and the stone architecture maintains the local semi-subterranean aspect.

The travelling and exchange of all these technical innovations and adaptations are true witness for the dynamism of cultural and commercial exchanges that had existed in this region for a very long time, a trade network involving both the circulation of goods and populations. The mutations of the Lower-Egyptian culture that one can perceive in the beginning of the fourth millennium due to contributions from Asia may have lent it a certain technological supremacy over Upper Egypt. This imbalance may furthermore have contributed both to the rise of a central power in the Delta, and to the ensuing conflict between Upper and Lower Egypt.

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131. Up to now, grapevines—a plant not indigenous to Egypt (James 1996: 199)—was thought to have been introduced into the Delta in a period neighbouring that of the First dynasty. She suggests that these vases were made in the Abydos region and that the wine must have been imported from Palestine in animal skins.

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Traders, Warriors and Farmers: Reanalyzing the Egyptian Expansion into Southern Palestine at the End of the Fourth Millennium (ca. 3200–3000 B.C.)

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Abstract

Recent findings in the south of Palestine reveal that the population of this region maintained major interactions with Egypt in the end of Early Bronze Ib and the opening of Early Bronze II. This relationship apparently underwent two successive phases of differing sociological natures: 1) the flight to Palestine from the Nile Delta of hybrid Egypto-Palestinian populations due to the initial expansion of the late Dynasty 0 kings into Lower-Egypt (ca. 3200–3100 B.C.), and 2) the subsequent administrative annexation of the southern Palestine and its resettled population by the first Dynasty 1 kings (ca. 3100–3000 B.C.). The first phase is evidenced by wares unearthed at a score of coastal sites (i.e., Rafah, Afridar) and at sites of the Judea piedmont (i.e., Tel Halif, Tel ‘Erani), a strong proportion of which are imports from the Nile Valley or local “hybrid” copies of these. The second phase is supported by the discovery at the Negev Oasis (i.e., ‘En Besor III) of an administrative outpost of Egyptian conception, as well as numerous stamp-seals of the emerging state. Nile Valley documents, such as the protodynastic carved palettes, may depict an Egyptian domination of the south of Palestine during the EB Ib2 and early EB II. Our paper seeks to determine the nature and sequence of the interaction between Palestine and Egypt, the latter of whose culture overflows into southern Palestine. Based on documentation from both countries, a map localising the settlements bearing evidence of a mixed Egypto-Palestinian culture will be rendered, along with precisions as to the hierarchy and chronology of the material. The Palestinian archaeological data will be considered in the context of a Nile Valley affected by the evolution of Egyptian political structure from complex chiefdoms to a centralised state. The major struggles between Upper and Lower-Egypt, followed by the expansion of the Abydos kings into the Nile Valley, certainly made notable impact on populations of the affected and peripheral regions. Consequently, the foundations of the “colonization” theory of southern Palestine by Egypt, a current theory having replaced that of simple trade relations between neighboring countries, will be reanalysed and alternative solutions will be proposed.

The close of the IVth millennium saw a strong Egyptian component in a cluster of Southern Palestinian sites belonging to the end of the Early Bronze Age I (EB Ib2, ca. 3200–3000 B.C.). In order to clarify this phenomenon, we have to look for its roots in the Nile Valley. We can define two principal evolutionary phases in Egypt that bore direct consequences on Palestine and on the Egypto-Palestinian relationship. The first phase is contemporary

with Naqada IId–Early Naqada IIIa (ca. 3300–3150 B.C.), and the second with Late Naqada IIIa–Naqada IIb–c1 (ca. 3150–3000 B.C.).¹

The relationship between the Nile's northern territories, Palestine and Upper-Egypt during Naqada IId–Early Naqada IIIa (ca. 3300–3150 B.C.)

An early triangular trade relationship involving the Delta, Upper-Egypt, and Palestine existed during three principal phases² before the Naqada IId thrust into the Delta generating a much more complex relationship between these areas.

In the Eastern Delta, on several sites along the trade routes leading to Palestine, we noticed a well-marked stratigraphic break in the archaeological layers. According to S. Salvatori,³ the gap in the stratigraphy at Tell el-Farkha is marked by a significant erosive interface between layer I (Naqada IIb–c)⁴ and layer II (Naqada III) of the site corresponding to Naqada IId.⁵ More recent excavations on the “Western Kom” of Tell el-Farkha⁶ show that the closing of phase 2, contemporary with Naqada IId,⁷ is characterized by a destruction layer (burned building).⁸ The phenomenon of a stratigraphical gap (a physical gap) is also visible at Tell el-Eswid.⁹ At this last site the stratigraphic break is marked by a sand deposit¹⁰ between the predynastic layers (phase A)¹¹ and protodynastic layers (phase B).¹² This gap seems to cover, at least partially, the phase III at Buto,¹³ notably the so-called

1. Special thanks to N. Collins for his assistance in this work, notably in the conception of the two illustrations included in this article, and to P.H. Eulert and N. Ould-Makhlouf for their insightful proofreadings of the text.
2. Early Buto (Late Badarian), Ma'adi (Naqada Ia–IIa), and post-Ma'adi (Naqada IIb–c) (Watrin 2000: 163–184; Watrin In press a).
3. Salvatori 2000 personal communication. See also Chlodnicki et al. 1991: 23.
4. Tell el-Farkha I is a post-Ma'adian and pre-Naqadan layer dating back to Naqada IIb–c, characterized by a 1% component of local-ware bearing a zig-zag pattern probably made by a rocker-stamp (Chlodnicki, Fattowich and Salvatori 1992: 62).
5. Chlodnicki, Fattowich and Salvatori 1991: 27, Tab. 1. Chlodnicki, Fattowich and Salvatori 1992: 185, Tab. 1.
6. Chlodnicki and Cialowicz 2000: 61–63.
7. The preliminary results of the latest Polish excavations at Tell el-Farkha have been published in PAM X and XI. The earliest phase of the Western Kom of Tell el-Farkha (Phase 1) reveals ceramic techniques typical of pre-Naqadan cultures of Lower-Egypt: pots with zigzag patterns (no Naqada-ware from this phase). Phase 2 features pre-Naqadan ceramics and a few unspecified imports from southern spheres, as well as a destruction layer (burned building). Phase 3 contains unspecified Naqada-ware in large quantity and is characterized by a reconstruction layer (the foundations of new walls have been set directly on the preceding destruction layer). Phase 4 shows the predominance of Naqada ceramics, including several types from the Late-class, datable to Naqada III.
8. Chlodnicki and Cialowicz 2000: 63. This destruction layer may directly precede a stratigraphical break that have been noted in other sectors of the site.
9. Van den Brink 1988: 7.
10. Van den Brink 1988: 7, 1992: 56. It seems that this “gap” has been forgotten in the following papers by van den Brink.
11. The ceramics unearthed and belonging to the earliest phase of Tell el-Eswid (phase A) are composed of a mixture of small jars with a slightly pointed base, comparable to the southern R 90 types (Van den Brink 1989: 69, Fig. 9: 1) typical of Naqada IIb and of small jars with a typical zigzag rocker-stamped decorative pattern.
12. The second phase of Tell el-Eswid (phase B) is characterized by the disappearance of the Roulette-ware class, and by the emergence of Naqada-ware in marl clay of D and W-classes (Van den Brink 1989: 76–77, Fig. 14) typical of late Naqada IIIa–IIIb.

“transitional layer” (Buto IIIa) dated Naqada IId by the excavator (*infra*). This gap revealed in the stratigraphy analysis is chronologically associated with a drastic change in the material culture (e.g., pottery) as far as the presently discussed site is concerned. Along with a possibly violent end, and temporary abandonment of certain Eastern Delta sites, we could acknowledge for the same period the emergence of new sites, culturally Naqadan, such as the site of Minshat Abu Omar.¹⁴ Minshat is an extensive necropolis whose earliest tombs date back to Naqada IId1 (MAO 1a)¹⁵ and whose rise is attested by a greater number of tombs in Naqada IId2 (MAO 1b). The necropolis of Beni-Amir¹⁶ presents a similar development. The dating of this site is largely based on the presence of Naqada IId2–early IIIa W-class jars.¹⁷

In the Western Delta, the excavations of Buto¹⁸ show a different pattern of development. The discovery of a ceramic set of the W-class (W 43 types,¹⁹ identical with those of Minshat I) in a so-called “transition” phase (Buto II–III) inclines us to date this phase as belonging to Naqada IId.²⁰ The following phase (Buto IIIa), also characterized by the presence of similar ceramics,²¹ can, as well, be considered as contemporary with Naqada IId.²² The general nature of the ceramic set during phase IIIa is still in continuous line with the production and techniques of the preceding phases²³ but has been classified in a transitional layer (“*Übergangsschicht*”) due to the introduction of new shapes and improved quality of manufacture for a portion of the ceramic material unearthed.²⁴ K. Köhler presents this evolution

13. For Köhler (1998: 46, Fig. 11.3), this gap may correspond to Buto IIIa–c.

14. Kroeper and Wildung 1994.

15. In various forums, we have debated the chronology of the Minshat I site (MAO 1a) and of its principal type-fossils, the D- and W- wares. The D-ware of Minshat I is common to the periods of Naqada IIc–d. On the basis of Palestinian ceramics datable to the Middle EB I (EB Ib1) and of the frequent and exclusive presence of late W-class types (W 43), furthermore sometimes coupled with D-class types (D 67c) (e.g., MAO 845, Kroeper and Wildung 2000: 148–150), the earliest portion of the Minshat cemetery should be dated in Naqada IId. The dating of the Minshat necropolis in terms of Upper-Egyptian chronology, based on available evidence subject to further findings (Watrin in preparation), is the following: Minshat 1a = Naqada IId1. Minshat 1b = Naqada IId2. Minshat 2 = Early Naqada IIIa. Minshat 3a = Late Naqada IIIa. Minshat 3b = Naqada IIb. Minshat 3c = Naqada IIc1–c2. Minshat 4 = Naqada IIc3.

16. Abd el-Moneim 1996: 253–275.

17. Abd el-Moneim 1996: 270, Fig. 30.

18. The first layer of Buto (Buto Ia) shows influences by Late Chalcolithic Palestine culture on the chronological horizon directly preceding Ma’adi. Buto Ib is contemporary with Ma’adi (Naqada Ia–IIa) and Buto IIa–b, characterized by the presence of Roulette-ware and by a 1% component of Naqada ware, and appears to be an essentially post-Ma’adian phase contemporary with Naqada IIb–c (see Watrin In press b).

19. Von der Way 1997: Pls. 45–46.

20. Might be relevant to stress that the earliest W-class types, meaning the models appearing in Upper-Egypt in Naqada IIc (i.e., W 14–19) remain absent in the Delta. They have been found at Gerza in the Fayyum, which by then was within the Naqadan sphere of influence.

21. Von der Way 1997: Pl. 45: 1–5; Pl. 46: 1–3–4; See also Pl. 4: 7–14.

22. Köhler 1998: 46, Tab. 9; p. 61, Fig. 36. For von der Way (1992: 3) Buto IIIa is dated “between early Naqada IId1 at the earliest and middle of Naqada IId2 at the latest”.

23. Von der Way 2000 personal communication. Köhler 1996: 216. The stratigraphy analysis of Buto, defined by 8 soundings led by von der Way, have shown no stratigraphic break between Buto II and Buto III.

24. The ceramics of Buto IIIa belong to two distinct manufacturing traditions: (1) local techniques inherited from Buto I–II using a crude clay and an important organic tempering element, and (2) new techniques using a finer Nile clay with a more restrained use of organic tempers, and visibly improved firing techniques which give the pottery a lighter color and more consistent aspect.

as a sign of Upper-Egyptian influx. During Buto IIIa, this slightly improved ceramic takes a growing share from negligible to the near-totality (Buto IIIb–c, Naqada IIIa²⁵) of the retrieval material and artefacts. Buto IIIa is also characterized by light architectural structures of wattle-and-daub, indistinguishable from preceding phases.²⁶ The recent excavations led by D. Faltings²⁷ may have surfaced W 47g (= Naqada IId2–early IIIa) in Nile silt, like those found at Mendes;²⁸ imitations of Naqada ware made locally by potters of the Western Delta.

Some Eastern Delta sites bear evidence of an abandonment by Lower-Egyptian cultural populations in Naqada IId1, and a subsequent re-occupation by purely Naqadan cultural groups beginning in Naqada IId2–early IIIa. Likewise, new Naqadan settlements emerged in the Eastern Delta during the same period. These findings are evidence of a new expansion²⁹ into the Delta by Upper-Egyptian culture, raising the question about possible demographic pressures in the narrow southern Nile Valley³⁰ bound to the emergence of new military and socio-organisational structures in Upper-Egypt. It is probable that the Abydos rulers controlled the eastern part of the northern Nile Valley by Naqada IId (*infra*). The situation in the western Delta is different. We note the progressive evolution of architectural and ceramic techniques, and this in apparently local contexts, possibly with Upper-Egyptian cultural influences (imitations of Naqadan ceramics at Buto and Mendes) which could be explained by the proximity to the new Naqadan centers in the eastern Delta.

Such a change in the political situation reshapes the inter-regional trade in favour of Upper-Egypt, thanks to their occupation of the eastern Delta, further underlined by the presence of Palestinian artefacts (Minshat Ia–b, Abusir el-Melek, El-Amra, Hierakonpolis³¹). Indeed in the main power center of the Naqada Culture, in Abydos, great quantities of Palestinian jars were found (500 EB I wine jars unearthed in ten Abydos tombs of Naqada IId–early IIIa³²). The western Delta maintains a reduced participation in inter-regional trade with Palestinian cultural spheres due to the new situation in the eastern Delta and this is attested by some sherds found at Buto III.³³

In the opposite direction, the few Egyptian products that reached Palestine are all of Naqada IId culture. Such products include zoomorphic palettes and rippleflake blades dis-

25. Köhler 1992: 13–14.

26. Köhler 1998: 43.

27. Faltings 1997 personal communication.

28. The earliest layer of Mendes feature a ceramic type common to all of the southern Delta cultures. The more recent layers, contemporary with Naqada IId2–early IIIa, reveal sherds of the W-class which may belong to types W 47–50. These vases are in Nile (and not marl) clay, indicating a local production (Friedman 1992: 204). Concerning the stratigraphy of Mendes, we have no evidence of either a continuity or a rupture between the pre- and protodynastic layers.

29. We recall that Kaiser's works (1957: 69–77) have shed light on a gradual extension of the Naqada Culture from a core located in the Nile's great loop. The earlier expansion, contemporary with Naqada IId, took place in the north of Middle-Egypt.

30. For Trigger (1998: 108) the increase in population density puts a certain pressure on the development of the Egyptian state.

31. *Minshat Ia–b*—Kroeper 1988: 23: no. 37–38–39–40; p. 24: no. 69–70; *Abusir el-Melek*—The Palestinian material at Abu Sir el-Melek for this period consists of a knobbed-bowl in grey burnished ware from a Naqada IId tomb (7g5), and a ledge-handled jar from an early Naqada IIIa tomb (41a2). (Scharff 1926: Pls. 41 and 45); *El-Amra*—El-Amra tomb b 224. Randall-Maciver and Mace 1902: Pl. XIV: Wb; *Hierakonpolis*—Quibell and Green 1902: Pl. LXIX: 3.

32. See the MDAIK series.

33. Köhler 1992: 20, Fig. 8.

covered at Azor, a fish-palette at Gaza, drop-shaped juglets at Zeïta and D and W-classes sherds at Tor Ikhbeineh II.³⁴ These artefacts uncovered in Middle EB I (EB Ib1) contexts point to a simple trade model³⁵ between the Palestinian spheres and the Naqadan settlements in the eastern Delta (e.g., Minshat I has yielded close parallels to the Egyptian products found in Palestine). Curiously, we have not identified any Egyptian vessels from the W-class dating from early Naqada IIIa³⁶ (e.g., the widespread W 50–51 types) in Palestine.³⁷

In Upper-Egypt, the period of Naqada IId–early IIIa is marked by several changes in the material culture³⁸ and in the development of society toward competing power structures, generally military oligarchies seeking ever greater regional control. Such types of organizations are illustrated by the finding of ceremonial knives with carved handles, such as the one found at Djebel el-Arak³⁹ showing on one side a “master of the beasts” of Mesopotamian inspiration, and on the other side a battle scene with Nile populations⁴⁰ led by an Abydos chief dwarfing a rival chieftom power (Naqada?).⁴¹ Another decorated dagger conserved in the Metropolitan Museum evokes a fluvial expedition led by an Upper-Egyptian chief bearing a

34. *Azor*—Ben-Tor 1975: Pl. 21.4 (rippleflake). *Amiran* 1985: Pl. XLVI (slate palette); *Gaza*—Clermont-Ganneau 1896: 431. This small palette (12 cm long) of exquisite quality is preserved at the Louvre. It has been linked to the closing of Naqada III/Late EB I by Miroschedji (1992: 92). Study of the fish-shaped palettes shows that the earliest examples (Naqada Ic–IIa) are the most luxurious, and degenerate in quality over time. At the closing of Naqada III, this type of palette is out of production. The Gaza model is clearly linked to Upper-Egyptian productions reaching back to Naqada IId–d1 (Watrin 1998: 1223); *Zeïta*—The most recent layers of Zeïta settlement date from Middle EB I and include at least one drop-shaped juglet imported from Egypt (Perrot 1997 personal communication); *Tor Ikhbeineh II*—We recall that D-Ware with boat motif is common in Upper-Egypt in the periods of Naqada IId–d, and that the best parallels in the Delta can be found at Minshat I. For Braun (1996: 103) *Tor Ikhbeineh II* is linked to Late EB I “mixed with Early Southern EB I”. A recent study by Yekutieli (1998 personal communication) shows that this layer is linked to the EB Ib1. For the chronology of the EB I in Palestine see the excellent work of Yekutieli (2001: 129–152).
35. In contrast to Miroschedji (1998: 20, Fig. 1), we note no “massive Egyptian expansion” into Palestine during Naqada IId–d/Naqada IIIa, corresponding to EB Ib1 Palestine. The Egyptian influx is rather linked to the following period (Naqada IIIb–c1) corresponding locally to EB Ib2.
36. We class as “Early Naqada IIIa” models W 30–49–50–51–56, and as “Late Naqada IIIa” models W 33–54–55–58–60–61–62. Kaiser (1957) placed most of these vases in Naqada IIIa2. This re-evaluation of Kaiser’s *Stufe* IIIa2 has been proposed by Hendrickx (Hendrickx einteilung “Naqada IIIA1” and “Naqada IIIA2”) (Hendrickx 1996a: 62).
37. The W-class represents around 15% of the early Naqada III ceramics. In the U-j tomb, the vases of the W-class (W 50–51) number around 800, representing a striking 60% of the funerary ceramics offerings (Dreyer 1998: 21–28).
38. In the ceramic industry, the period of Naqada IId sees the emergence of new W-class wares (W 24, 25, 41, 43, 47). The dwellings of this period seem to develop elements of earthen fortifications (e.g., illustrated by a clay miniature of a settlement from an Abadiya tomb) (Hoffman 1979: 148). The houses are larger than dwellings of preceding periods, and are rectangular in shape, illustrated by another miniature in clay from the tomb a4 of El-Amra, which dates back to Naqada IId1 (Randal-Maciver and Mace 1902: 42, Pl. X: 1–2).
39. Bénédite 1916: 1–34. The dating of this knife discovered out of context is difficult. If indeed it originates in Djebel el-Arak, it is certainly from Naqada IIIa (Hendrickx 1995 personal communication). It may also come from Abydos as suggested by Dreyer (1998 personal communication), a condition which would allow a Naqada IId dating (for similar findings at Abydos U-503, see Hartung 1998: 99, Fig. 7, Pl. 5).
40. The two adversaries bear both genital sheathes which identifies them as Upper-Nile peoples. Additionally they can be distinguished according to their respective hairdress, short in one case, long in the other (Vercoutter 1992: 178–180).

white crown in the Delta (territory identified by the sign “*Ta-mehu*”) followed by the submission of the defeated populations. A third decorated knife discovered in tomb U-127⁴² and dating from Naqada IId also evokes relationships with territories in the Northern Nile Valley. One fragment of the knife shows bearded prisoners sitting or standing, some with their hands tied behind their back. Another fragment of the same knife presents a line of bearded people carrying goods (the first character is carrying a Lower-Egyptian type globular jar with a flaring rim, the second one has a clearly Palestinian EB I jar with loop-handles). This knife certainly illustrates the military victory of Abydos over the regional powers situated beyond the Fayyûm, and the offering of tributes to the winner.⁴³ The question of a regular tribute, levied by Upper-Egyptian power on the territories of the Nile Delta, is raised by the discovery in the tomb of an Abydos chief⁴⁴ known as “Scorpion I” (U-j)⁴⁵ from early Naqada IIIa, of several hundred W 50 and W 51 type vases containing vegetable fats. Part of these pots may come from northern lands, as the presence of numerous ivory labels on jars in the U-j tomb mentioning Nile Delta villages (Buto, Bubastis)⁴⁶ seems to indicate. The tomb also contained hundreds of wine jars of various types, showing some likenesses to Palestinian productions from the Middle EB I. If part of these jars has been clearly imported from Palestine, we have also more recently suggested⁴⁷ that at least one type out of these jars with scarce contemporary parallel in Palestine (i.e., bottles) may have been manufactured in the Delta where viticulture seems to have been introduced in the course of the EB I by Palestinians.⁴⁸ The regular and quantitative arrival of Palestinian winejars in the Naqada IId–early

41. We have, in a recent article, suggested a cause-to-effect relationship between the decline in wealth of the Naqada (Naqada settlement necropolis) funerary offerings, and simultaneously the growing wealth of the Abydos tombs findings beginning in Naqada IId (Watrin In press c).

42. Pumpenmeier 1993: Pl. 6. Dreyer 2000: 7, Fig. 6b.

43. In another Abydos tomb of Naqada IId (U-134), the discovery of a stamp-seal impression on which appears three times a sign that may be an archaic representation of “mountain” (*Khaswt*), if so depicting areas “foreign” to Upper-Egypt which may as well be some territories in Lower-Egypt, or possibly eastern areas located beyond the Delta (?).

44. The social position of the master buried in tomb U-j may be deduced by the size of the funerary chamber (10 m x 8 m) which contains 12 brick compartments and originally more than 1500 jars, as well as objects representative of power such as an ivory scepter.

45. Hartung 1993: 49–56, Pl. 11; Hartung 1996: 39–41, Pl. 8. The ink design on a W-class vase, portraying a scorpion posed on a rectangular structure (Dreyer 1998: 47, Fig. 33c) may represent the earliest representation of a *serekh* and may thus designate the master of tomb U-j. His direct successors are buried in immediate proximity, and their function may also be deduced from anonymous *serekhs* featured on W62-class sherds from tomb U-s (late Naqada IIIa) as well as a W 71a from tomb U-t (Naqada IIIb1) (Dreyer 1990: 59, Fig. 3a-d; Pumpenmeier 1993: 46, Fig. 9).

46. Dreyer 1992a: 297–298, Pl. 6: 3–4. The Abydos tombs of Cemetery U reveal the earliest evidence of writing yet known in Egypt appearing on the elements of funerary offerings (ivory labels, pottery). Their existence is a testimony of the establishment of a complex administration of goods, in which geographic entities and ethnic personifications are identifiable, alongside with the names of individuals (kings/administrators).

47. Watrin In press c.

48. The early Naqada IIIa winejars from U-j tomb, of undecerned origin, may be the fruit of a Palestinian cultural heritage in the Delta. Likewise, recent petrographical analyses led by N. Porat (In press) conclude that some of these wine-jars are not native Palestinian productions, but according to Porat, probably originating in the Abydos area where Palestinian potters may have worked.

IIIa Abydos tombs (e. g. U-o, U-a, U-j tombs)⁴⁹ is certainly evidence that the Abydos regional leadership drew material advantages from territories under and beyond its administration.

This extension of the Abydos chiefdom into the Delta area is doubled by another expansion toward the south of Naqada area (Fig. 1), as illustrated by a stone-carving recently discovered by D. and J. Darnell at Djebel-Tjauti.⁵⁰ Further south, the rival chiefdom of Hierakonpolis controls a more or less delimited territory, probably up to the limit of Djebel-Silsileh, the supposed border between Egyptian and Nubian lands,⁵¹ though perhaps extending at times as far south as the First Cataract (Elephantine). Beyond that borderline, a study of the Sayala area sites, a strategic area leading to the goldmines of Wadi-Allaqi, shows that these tombs contain a mixture of Naqadan and Nubian pottery. On Cemetery 111, the earliest types of the W-class belong to types W 24–26⁵² (Naqada IId1), and the most recent ones date to early Naqada IIIa (e.g., W 51). The important quantities and frequency of the findings of such ceramics show the intensity of trade relations between Upper-Egypt and Nubia territory. This trade is underlined and confirmed by symetric presence of numerous Nubian artefacts and products in Upper-Egypt during the same time (e.g Hierakonpolis).⁵³ For T. Wilkinson,⁵⁴ Sayala is the seat of an independent chiefdom, but this area may also have been dependent on the chiefdom of Qustul, located still further south. No evidence until now in the sites of Lower-Nubia allows us to confirm any Naqadan expansion into these areas during Naqada IId–early IIIa.⁵⁵ Globally speaking the southern trend has been much weaker than the move north, toward the Eastern Delta.

The relationships between the Northern Territories of the Nile Valley, Palestine, and Upper-Egypt in Late Naqada IIIa–Naqada IIIb–c1 (ca. 3150–3000 B.C.)

During this period, the Abydos group takes over one after the other the competing chiefdoms of Upper-Egypt, and develops its society into an imperial power with a dynastic leadership (Dynasty 0). Several wars are carried on the periphery yielding considerable additional wealth notably under the form of sizeable cattle herds and slave manpower as illustrated on the ceremonial mace-head of king Narmer.⁵⁶ The multiplication of royal proprietary marks (*serekhs*) on containers, added to the ink inscriptions of the product type and the geographical origin, is evidence of a tribute levy system followed by institutionalized

49. Hartung 1994: 110.

50. Wilkinson 2000: 386.

51. Needler 1984: 224.

52. Firth 1927: 98, Fig. 3.

53. Needler 1984: 110–113 and 224–231.

54. Wilkinson 2000: 387–389, Fig. 3. Wilkinson bases his demonstration on the presence of elitist effects such as two maces with golden handles found in Grave 1 of Cemetery 137 (Firth 1927: 205–208, Fig. 8, Pl. 5: 18). These maces were probably imported from Egypt, as one of the themes is well known in Upper-Egypt (savanna animals dominated by an elephant that is tromping two snakes) comparable to those represented on the ivory knife-handles belonging to the dignitaries from Hierakonpolis (i. e. Abu-Zaidan) (Needler 1984: 154). The presence of these *regalia* is clearly linked to a local elite (the tomb contains Nubian ceramics) but does not tell us anything more about the nature of these links with the elite of the northern power centers (Abydos/Hierakonpolis) or southward in the Nile Valley near the 2nd cataract (Qustul).

55. At Cemetery 111, we note that some containers (closed shapes) are Naqadan whereas the kitchenware (open shapes such as bowls) are of Nubian ceramic-types (local blacktopped). This phenomenon may be interpreted as a recycling of Egyptian container types for funerary use by local populations.

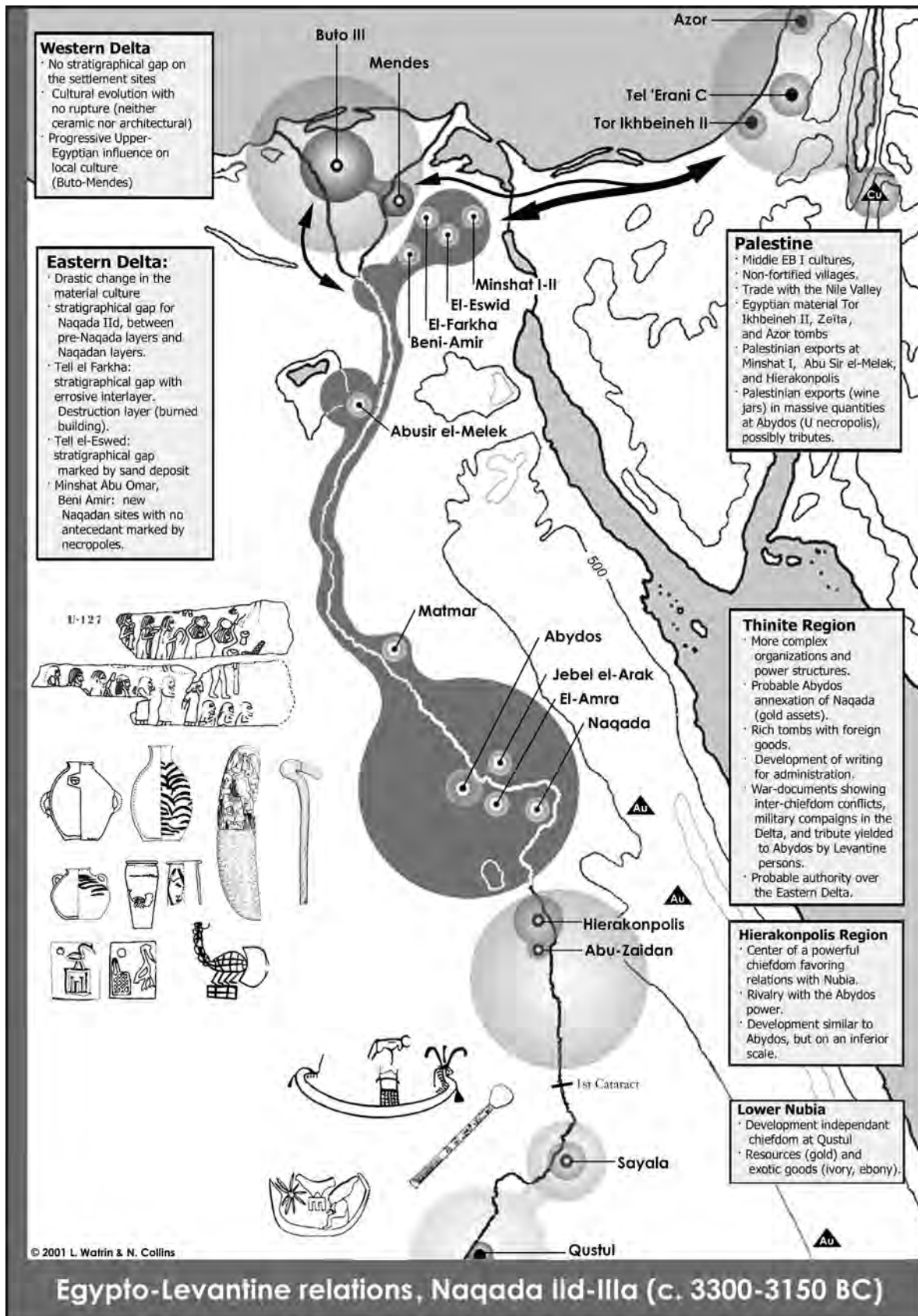


FIGURE 1.

taxation in most of the Nile Valley, including the Delta,⁵⁷ and probably Southern Palestine (*infra*).

Further excavations in the southern Delta will be necessary to analyse the demographic parameters of the Cairo area in the period preceding Naqada IIIb.⁵⁸ Memphis, Dynasty 1's future capital, has yielded archaeological findings indicating a population rise. This can be deduced by the analysis of Turah, Helwan, and Abu-Roash cemeteries, all Naqadan⁵⁹ necropolises having evolved since Naqada IIIb⁶⁰ uninterrupted. The emergence of such Naqadan installations may correspond to the massive arrival of populations from the narrow river valley to the South.⁶¹ The representation of a Falcon standing on an "anonymous *serekh*" in a Helwan tomb (160 H3, Naqada IIIb⁶²), apparently belonging to a bureaucrat of Lower-Egypt, demonstrate the presence of delegated administrators from Upper-Egypt, who controlled trade throughout the Delta. These royal marks are painted or incised after firing on numerous containers in Tarkhan, Turah, and Helwan.⁶³

In the Eastern Delta, the material culture is entirely Naqadan by the time of Naqada IIIb.⁶⁴ The population of certain sites is sometimes lesser than in the previous periods (e.g., Minshat),⁶⁵ whereas other sites emerge (e. g. Kufur Nigm⁶⁶). The dating of these vil-

56. Quibell 1898: Pl. XXVI.B. The principal scene featured on the Narmer mace represents the King on his throne facing what is apparently a woman seated in a servant-borne sedan-chair, suggesting a captive princess (Moorey 1988: 15).
57. E. g. inscriptions of King Ka/Sekhen (Petrie, Wainwright and Gardiner 1913: 67; Vernus: 88, Pl. 10).
58. The period illustrated by the Ma'adian sites (all situated in the Cairo area) goes to its end around 3500 B.C. The southern Delta has yielded no further evidence of occupation before Dynasty 0, though this may be "luck of the dig".
59. The material of the Cairo area at Naqada IIIb-c1 is composed notably of W and L-class wares, of rectangular palettes with incised lines around the edges, of bull-shaped amulets, and of stone vases.
60. With the exception of a Turah tomb (222) dating to late Naqada IIIa (Petrie et al. 1913: Pl. LXIII).
61. We can observe that while new sites emerge in the southern Delta, the population of certain Fayyum area sites regresses, as seen at Tarkhan (50km south of Cairo) where we have 15% less tombs between late Naqada IIIa and Naqada IIIb-c1.
62. Saad 1947: 166, Fig. 14. Köhler 1999: 50–51, Fig. 1. This tomb has been dated by Saad as belonging to the reign of king Aha and by Köhler in Naqada IIIa2 or IIIb. The cemetery of Helwan opens at Naqada IIIb and the motif of the cylinder seal of tomb 160 H3 features a pair of giraffes facing each other, as on the palettes of Naqada IIIb (e.g., on the "Battlefield"/Lion palette); as such this cylinder is probably contemporary with Naqada IIIb.
63. *Tarkhan*—*Serekhs* of kings Ka and Narmer and non-identifiable *serekhs* (Petrie et al. 1913: Pl. XXXI; Petrie 1914: Pls. IX-X); *Turah*—*Serekhs* of kings Double Falcon, Triple-Mace, and of a non-identified sovereign (Junker 1912: 47, Fig. 58); *Helwan*—Two *serekhs* of king Ka/Sekhen in tombs 1627 et 1651 of Helwan and a plaque in faience bearing Narmer's name (Saad 1947: 112, Pl. LX; P. 165, Fig. 13a).
64. At Minshat III, we notice a new orientation of tombs according to Naqadan traditions (Kroeper 1988: 14).
65. We note, for example, 55% less tombs in Minshat III than in the preceding periods.
66. Preliminary data on Kufur Nigm show an occupation beginning in Naqada IIIb-c1 but only a small section of this cemetery, bearing some 60 tombs, has been excavated and published (Bakr 1988: 49–62). Bakr (2000: 25–26). Bakr indicates that 53 additional tombs were discovered but have not been published, as is the case with a settlement dating to the "late Protodynastic". Moreover, it is also probable that a jar bearing the name of a "Triple-Mace" king (Fischer 1963: 44, Fig. 1) originates from the area or even from the site of Kufur Nigm itself.

lages is made possible by the presence of Naqadan type-fossiles such as W-class in marl clay (Tell el-Farkha, Tell el-Eswid B, Tell Ibrahim Awad 6, Minshat III).⁶⁷ The chronology is also based on stone palettes, usually of rectangular shape with several engraved parallel lines along the edges (e.g., Minshat III⁶⁸). We can also point out two exceptional pieces: a rectangular palette with prominent decorations which seems to figure a temple in miniature (Sais?⁶⁹), and another one, shield-shaped, bearing wild animals scenes with two panthers with a long neck, a motif clearly inspired from Mesopotamia (Kôm el-Ezzat⁷⁰). We also find large jars bearing *serekhs* of the Abydos Kings (Tell Ibrahim Awad 6, Minshat IIIb–c, Kufur Nigm, Kafr Hassan Dawûd).⁷¹ Petrographical analyses indicate a local manufacture in the northeastern Delta,⁷² thus controlled by the royal administration of the South.

In the Western Delta, at Buto (phases IIIId–IV) we also notice a stratigraphic continuity with the preceding period. The material is largely comparable to that found in layers succeeding the forsaking layer of Tell el-Eswid.⁷³ According to K. Köhler, 100% of the Buto ceramics from Naqada IIIb–c1 belong to Upper-Egyptian tradition.⁷⁴ The ceramic shapes are identical with those of the South (notably the W-class), confirming that Buto has already come under Naqadan influence, and is controlled by the kings of Abydos by Naqada IIIc1 at the latest. Likewise, the presence of administrative marks on a large ceramic type known as “bread moulds” beginning in Buto phase IV⁷⁵ shows that subordination. At Minshat-Ezzat,⁷⁶

67. *Tell el-Farkha*—W 64p/type 46k and W 80b/type 47r (Chlodnicki and Cialowicz: 64, Fig. 1). Parallels found in Brunton and Caton-Thompson 1928: Pl. XXXIX: W 64p and W 80b. We also note that the site of Tell el-Farkha has recently revealed W-class wares in Naqada III funerary contexts (A. Maczynska 2001 personal communication); *Tell el-Eswid B*—Van den Brink 1989: 76, Fig. 14; *Tell Ibrahim Awad 6*—W 71a (Van den Brink 1992: 66, Pl. 19); *Minshat III*—W 71a in MAO 160; W 80 in MAO 340–160; W 85 in MAO 160; W 90 in MAO 673–674–758 (Kroeper and Wildung 1994: 15–31–107–154–159–160–161).

68. MAO 44–50–400–434–866–1050 (Kroeper 1996: 86–88). According to Petrie (1920: 38), the use of a edge lining on the square palette begins at SD 76. At Tarkhan, this kind of palette can be found in tombs of late Naqada IIIa period (753, 968, 1124, 1135, 1619, 1781, 1845, 1875), Naqada IIIb (16, 260, 1579, 1705, 1805), Naqada IIIc1 (52, 415, 1026) and Naqada IIIc2 (117, 212) (Petrie et al. 1913: Pl. XXIX; Petrie 1914: Pl. XXIV).

69. Hendrickx 1996b: 28–32, Fig. 5. This palette was bought in Cairo, the provenance is thus hypothetical but Sais is the most probable origin. Further an ivory label in the name of Neithotep (Narmer’s wife?) discovered in tomb 728 H5 of Helwan also featuring the Sais glyph (Saad 1951: 43, Fig. 14), represents a Lower-Egyptian parallel to this palette and a dating in Naqada IIIc1. Let us point out that at Sais, recent archaeological soundings (Wilson 2001: 3–5) have revealed a settlement covering the second part of the Fourth millennium.

70. Gabr el-Baghdadi 1999: 9–11.

71. *Tell Ibrahim Awad 6*—*Serekhs* of the Kings Double-Falcon, Ka/Sekhen and Narmer (van den Brink 1992: 52, Fig. 8); *Minshat IIIb–c*—An anonymous *serekh* in MAO 520; *serekh* with the name of Narmer in MAO 44 and possibly another Narmer *serekh* in MAO 160 (Kroeper 1988: No. 94–95–141); *Kufur Nigm*—Anonymous *serekhs* and Narmer *serekhs* (Bakr 1988: 55, Pl. 1a–b); *Kafr Hassan Dawûd*—*Serekh* of Ka/Sekhen in KHD 1008 and *serekh* of Narmer in KHD 913 (Hassan 2000: 38–39).

72. Case of a vase bearing an atypical form of the name “Narmer” (Dreyer 1999: 2, Fig. 1).

73. The “gap” revealed in the stratigraphy at Tell el-Eswid corresponds to Buto IIIa–c (see Köhler 1998: 46, Fig. 9).

74. Köhler 1992: 13–17.

75. Köhler 1998: Pl. 66, no. 7.

to the north of Mendes, an SCA excavation gives evidence of widespread burning in the predynastic settlement: in the pre-burned layers, the material was principally of Lower-Egyptian tradition, in the post-burned layers, the material was entirely Naqadan. May this suggest a violent take over of the South ?

In Upper-Egypt, the principal power center remains Abydos. Throughout Naqada IIb, the kings of this area gradually extend their authority over territories that have not yet been entirely conquered or assimilated. This expansion follows the classic “core-to-periphery” model. This expansion took place by a violent process culminating in Naqada IIc1, when the peripheral territories of the Thinite rulers were simply integrated by military force, as commemorated on a variety of documents (monumental palettes, stone carvings). The apex of the Abydos expansion occurred between 3150 and 3000 B.C. (fig. 2), and was engineered in three principal movements: 1) southward through Hierakonpolis and toward Nubia, 2) northward-west into the Buto-Sais area of the Western Delta from the occupied Eastern Delta, and 3) northward-east across the Sinai into Southern Palestine.

To the south of the Thinite area, the chiefdom of Hierakonpolis, despite extensive excavations led by M. Hoffman, have yielded no royal cemetery comparable to that of Abydos. It would thus appear that Hierakonpolis, by Naqada IIb–c1, was already eliminated as an Abydos rival and ruled by the Thinite kings. Likewise, Hierakonpolis appears to have been a major political and religious center, but was certainly not the center of unifying power structure, as has often been claimed.⁷⁷ We also are convinced that most (if not all) of the *serekhs* inscribed or painted on jars—from Nubia all the way to Palestine—belong to a single line of kings originating in Upper-Egypt, many of whom were buried at Abydos. This schema does not exclude the possible existence of rival powers in the peripheral areas, though not possessing a military-state structure comparable to the one found in Abydos (i.e., tribal resistance and guerrilla warfare). There is no reason so far given the homogeneity of the graphical representations of the royal *serekhs*, to think that some of these inscriptions would belong to “competing” kings,⁷⁸ supposedly ruling from the Fayyum and the Delta, as has been suggested by G. Dreyer.⁷⁹

In Lower Nubia, Djebel Sheikh Suleiman⁸⁰ near the 2nd cataract has yielded a graffiti commemorating a campaign of a Dynasty 0 king (a King “Falcon”). The royal signature of this leader, as T. Wilkinson accurately points out,⁸¹ bears the same relief-dot shading as

76. Hassan 1998: 2.

77. Theory based essentially on religious texts from historical periods which evoke a kingdom of Hierakonpolis (on this point, see Weill 1961: 259–261). This concept has been further strengthened by the discovery of the Narmer palette on the same site. However since this stela/palette was buried in a period considerably posterior to Narmer and to “unification” (the Narmer palette was found in association with artefacts of king Khasekhemwy of the 2nd dynasty), we cannot see it as a solid premis for establishing Hierakonpolis as the capital of Upper-Egypt during either pre- or post-expansion phases. Hierakonpolis is nonetheless still identified as the center of Egyptian unification by Kemp (1989: 34, 45, Fig. 13) or Adams (1995: 24, 46).

78. Nevertheless, we do find in Qustul tomb L 24, a Nubian incense burner which bears a decoration which appears to be an imitation of royal Thinite symbols, as noted by Wilkinson (2000: 389).

79. e.g., Dreyer’s “King Crocodile” of the Fayyûm (1992b: 259–261).

80. Needler 1967: 87, Fig. 1. Murnane 1987: 282–285, Fig. 1. Wilkinson 1999: 178, Fig. 5.3, no. 2.

81. Wilkinson 1998 Oral communication, Jerusalem Symposium.

does another *serekh* found in Palestine at Palmahim Quarry 2,⁸² placing both *serekhs* on Kaiser's "Horizon A" (Naqada IIIb).

The *serekhs* of sovereigns who ruled before Narmer, also appear in the northern Sinai, where the Egyptians seem to have installed outposts as relays and possibly as collection centers. The earliest royal signatures have been discovered in the area of Wadi el-Arish incised on jars (the so-called "Rafah jars"); in this case anonymous *serekhs* comparable to those of Abu Sir el-Melek and Abydos.⁸³ The "signatures" of a king "Double Falcon" have also been discovered on storage jars at El-Beida and at Bir el-Noss,⁸⁴ confirming the existence of an intense flux of goods⁸⁵ from Egypt into Palestine at the beginning of Naqada IIIb.

The Nile Valley, inevitable highway of the desert, serves the increased exchange of goods on an inter-regional scale. We thus find Palestinian ceramics in Nubia (Qustul⁸⁶) as well as Nubian ceramics in the Delta (Minshat IIIb⁸⁷). In the eastern Delta, some Palestinian jars give evidence of the trade with the East (Tell el-Eswid B st. VII, Tell Ibrahim Awad 6, Minshat III).⁸⁸ In Naqada IIIb Upper-Egypt, the massive and regular flow of Palestinian wine jars into the Abydos tombs seems to have been cut off.⁸⁹ Furthermore it is probable that Palestinian people still lived in the Delta in Naqada IIIb-c1. Indeed a petrographical study shows that there exists at least one population group in Egypt that manufactures morphologically Palestinian containers such as this ledge-handled jar from Tel Halif Silo-Site stratum II (EB Ib2), for export to Palestine.⁹⁰ The discovery of Canaanean sickle blades at Tell el-Farkha⁹¹ may give similar evidence.

In the Palestinian territory itself, the relations are much more strongly marked since we find Egyptian artefacts contemporary with Naqada IIIb-c1 on 18 sites dating from the Late EB I (EB Ib2). On about half of them, all located in southern Palestine, the material is particularly rich and varied.⁹²

In Palestine the pottery imported from Egypt consists essentially of cylindrical vessels of the Wavy-handled class and of jars of the Late class, respectively representing some 50% and 30% of the ceramic sets in Egypt between Late Naqada IIIa and Naqada IIIc1.⁹³ In Palestine,

82. Van den Brink 1998: 220, Fig. 2a.

83. *Wadi el-Arish*—Gophna 2000 personal communication. Yekutieli's works (1999 personal communication), demonstrate that the north-Sinai zone the most likely to have been inhabited during the 4th millennium would be in the Wadi el-Arish, an area which would have been able to shelter some 5000 people; *Rafah*—Amiran 1970a: 89–94, Pl. 1. Van den Brink 1996: 143, types I.3 and II.a4; Pl. 24b; *Abu Sir el-Melek*—Abu Sir el-Melek tombs 1021 and 1144. Van den Brink 1996: 143, types I.1 and I.2, Pl. 24a; *Abydos*—Tombs U-s and U-t (Dreyer 1990: 59, Pl. 3a-d; Pumpenmeier 1993: 46, Fig. 9).

84. *El-Beida*—Clédat 1913: 119–20; *Bir el-Noss*—Oren 1989: 396: 1.

85. Yekutieli's works (1999 personal communication) show that certain EB I sites of northern-Sinai include 60% of Egyptian material, of which some 90% are closed forms (jars) and 5% are open shapes (bowls).

86. Williams 1986: 104, Fig. 48, Pl. 25.

87. Kroeper 1988: 15, no. 113–114.

88. *Tell el-Eswid B st. VII*—Van den Brink 1989: 71, Note 27. Drawing in Andelkovic 1995: 62, Fig. 24: 9; *Tell Ibrahim Awad 6*—Van den Brink 1992: 53, Fig. 9: 5; *Minshat III*—Kroeper 1988: 27: 115.

89. With the possible exception of an imported jar in tomb U-y (Hartung 1996 personal communication).

90. Levy et al. 1997: 35, Fig. 27a–b. The Delta manufacture of this jar appears to be confirmed by petrographical analysis (Levy 1998 personal communication).

91. Chlodnicki and Cialowicz 1999: 64.

these vessels are present on at least 14 sites.⁹⁴ At Tel 'Erani, the excavations of Yeivin (Strata VI–V) have yielded numerous cylindrical vessels of W-class made of the yellowish Egyptian marl clay, containers belonging for the most part to types 46 (with a plastic/wavy decoration) and 50 (without decoration).⁹⁵ We can also identify globular bottles of L-ware, including one complete jar of type 75c.⁹⁶ The most recent excavations led on the site of Tel 'Erani by Kempinski and Gilead establish that the layers preceding Late EB I (EB Ib2), contemporary with EB Ia2 (Tel 'Erani D) and with EB Ib1 (Tel 'Erani C) have yielded no ceramic imported from Egypt.⁹⁷ This schema can be observed at Lod, where E. Yannai⁹⁸ reports that the Egyptian artefacts from the site only appears in EB Ib2 context.⁹⁹ The dating of the protodynastic material in a late EB I phase is confirmed by the presence in the same layers of Palestinian platters which bear a red-slipped on the exterior and white on the inside.¹⁰⁰ At Lod, we can identify¹⁰¹ L-class jar types 59g, 75b, 88E, and W-class vessels types 47p,

92. The earliest works of synthesis on the question of the relationship between Palestine and Egypt during the fourth millennium, including maps of the distribution of Egyptian material in Palestine, has been completed by Brandl and Porat (1992: 433–477), but no chronological work has been established. Indeed, these researchers consider the EB I period as one single phase, a period which according to Yand chronological parameters. We also note a very precise article by Hartung (1994: 106–ekutieli (2001: 129–152) covers 4 major subdivisions (our work confirm a division of 113), as well as our own works (Watrin 1995; a sum up of the EB I into 4 phases). Another synthesis lies in Andelkovic's this work is published by Watrin 1998: 1215–26.
93. Statistics which can be derived from the study of the Naqadan cemeteries in both Upper- and Lower-Egypt (Watrin in preparation).
94. 'En Besor III (Gophna 1995: 28, Fig. 6; 82–85, Fig. 7–8–9–10; 268–269, Fig. 5–6). Tell es-Sakan (Miroschedji and Sadek 2000a; Miroschedji and Sadek 2000b: 31, Fig. 2: 7–8, 9–11, 12). Afridar (Gophna 1974: Pl. 15). Tel 'Erani (Brandl 1989: 369–371, Figs. 9–10–11). Tel Halif (Gophna 1995: 241, Fig. 2; Alon and Yekutieli 1995: 171, Fig. 21). Tel Ma'ahaz (Beit-Arieh and Gophna 1999: 201–202, Fig. 9–10). Tel Malhata (at least one sherd of a cylindrical W-class with rope decoration (Ilan 1998 personal communication). Arad IV (Amiran 1978: Pl. 55). Lod (Van den Brink and Yannai n.d.). El-Maghar (Andelkovic 1995: 53). Jericho (a jar of L-class) (Hennessy 1967: Pl. XXV: 15); Megiddo (a jar of the L-class) (Andelkovic 1995: 55, Pl. 21: 4). Abu el-Kharaz (a jar of the W-class) (Fischer 1996: 108, Fig. 6: 8). Ain Assawir (two juglets, L-class?) (Yannai and Braun 2001: 45, Figs. 3–4).
95. I thank B. Brandl for having allowed me to study this material in 1998 and 1999.
96. Brandl 1989: 370, Fig. 10, 6.
97. Kempinski and Gilead claim to have found "Blacktop kitchenware" imitations at Tel 'Erani D (Kempinski and Gilead 1991: 171), but nothing has been published. Likewise, we note that the so-called "Egyptian component" at Tel 'Erani C, consisting essentially of locally made "drop-shaped juglets" (Kempinski and Gilead 1989: 58. Kempinski and Gilead 1991: 183, Fig. 12, 11–12–13), utensils which may be morphologically closer to Egyptian R-class types, but which by their extraordinarily common shape, may have also been produced independently of Egyptian influence. At Tel 'Erani C there does exist a single container that may be culturally linked to Egypt (one locally made bread mould) (Kempinski and Gilead 1991: 183, Fig. 12, 10), a container which may also have emerged from the most recent layers ('Erani VI–V), where there existed a strong Egyptian component (intrusion from a later layer?) (Kempinski and Gilead 1991: 171).
98. Yannai 2000 personal communication.
99. Some Egyptian sherds, doubtless residual, appear in the next layer which dates back to Early EB II.
100. In the EB II, the platters have a red-burnished slip inside and out. The type-site for EB II in Palestine is Arad (Amiran 1978).
101. I thank E. Yannai for having allowed me to study the material on his site at Lod in May 2000.

49d, 50. At Tell es-Sakan, the imported Egyptian material includes containers of L-class types 75,¹⁰² as well as W-class with a plain line (type 49L¹⁰³). The Egyptian material on these two sites indicate a dating situated between the closing of Naqada IIIa and Naqada IIIc1.¹⁰⁴ Tel Ma‘ahaz¹⁰⁵ has yielded different jars of the L-class (types 70n and 74).¹⁰⁶ Cylindrical vases with a net pattern painting (W 63) characteristic of Naqada IIIb have been unearthed at Tel Halif.¹⁰⁷ At ‘En Besor III, W-wares have been found¹⁰⁸ with plastic/wavy decoration (type 46d¹⁰⁹), appearing between Late Naqada IIIa and Naqada IIIc1, and with cord impress (type 48s¹¹⁰) which appears at the beginning of Naqada IIIb and which continues to be manufactured until Naqada IIIc2. A global view of these Egyptian ceramics in Palestine allows us to refine the timeframes of their importation: rather than assuming that the ceramics were imported over the length of their type’s lifespan (which would give us an excessively long phase beginning in Late Naqada IIIa and closing in Naqada IIIc2), we can put these ceramic types together with L-class jars with incised *serekhs* found in the same layers, all of which are dated in a more narrow phase between Naqada IIIb and Naqada IIIc1 (Kaiser’s “Horizons A and B”).¹¹¹

Eight southern Palestinian sites (Afridar, Sakan, ‘En Besor III, Tel ‘Erani, Tel Halif, Lod, Ma‘ahaz, El-Maghar)¹¹² include locally made Egyptian-type ceramics. While no sample of W-class imitation has been found, local copies of “L-class wine jar” have been discovered (e.g., Lod¹¹³). Likewise, these sites have yielded large quantities of thick-walled bread moulds of several shapes and sizes, all made out of local clay. This type of ware is

102. Miroschedji and Sadek 2000 b: 31, Fig. 2: 12–13.

103. Miroschedji and Sadek 2000 b: 31, Fig. 2: 7. We would have liked this drawing to be of a better quality. Too often in Palestine, archaeologists neglect to include close-ups on the upper section of the W-class jars bearing a wide range of decorative motifs, any one of which could offer valuable chronological clues.

104. At Tell es-Sakan, the excavators, after the first campaign, dated the material to Naqada IIIa (Miroschedji and Sadek 2000 b: 31), then to Naqada IIIa–b (Miroschedji and Sadek 2000 a: addenda). After the second campaign, the chronology was once again revised by its authors: “the four Egyptian layers date to Naqada IIIb” (Miroschedji and Sadek 2000 c: 99). At Tell es-Sakan the excavations concern principally layer A-7, which yielded material (Miroschedji and Sadek 2000 b: 31, Fig. 2) clearly linked to Naqada IIIb–c1.

105. Beit-Arieh and Gophna 1999: 191–207.

106. Beit-Arieh and Gophna 1999: 203, Fig. 10, 9–10. The jar of Tel Ma‘ahaz decorated with three impressed half-bows on the shoulder (type 74) finds a direct parallel in a Minshat 3b tomb dated back to Naqada IIIb (Kroeper and Wildung 1985: 58, Fig. 168).

107. Gophna 1995: 241, Fig. 2. Alon and Yekutieli 1995: 171, Fig. 21: 14.

108. Gophna 1995: 82, Fig. 7.

109. Gophna 1995: 82, Fig. 7: no. 1.

110. Gophna 1995: 82, Fig. 7: no. 3.

111. Kaiser 1990: 289.

112. *Afridar*—Porat 1989; *Sakan*—Miroschedji and Sadek 2000a. Miroschedji and Sadek 2000b: 31, Fig. 2: 1–4–5–6; *‘En Besor III*—Gophna 1995: 28, Fig. 6; P. 64, Fig. 3; P. 75, Fig. 2; P. 268, Fig. 5; *Tel ‘Erani*—Brandl 1989: 374, Fig. 13; *Tel Halif*—Gophna 1995: 241, Fig. 2; *Lod*—Van den Brink and Yannai n.d.; *Ma‘ahaz*—Beit-Arieh and Gophna 1999: 204–205, Figs. 11–12; *El-Maghar*—Porat 1989: Appendix 2a; Andelkovic 1995: 53.

113. Van den Brink 2000 personal communication. Nevertheless, most globular bottles of L-ware found in Palestine are imported from Egypt.

particularly current on the Delta sites—made out of Nile clay—which forms some 40% of the ceramic set (e. g. at Tell el-Eswid B¹¹⁴). Numerous bowls including the flaring-rim “lotus-shaped” type 3¹¹⁵ bowl have also been unearthed.¹¹⁶ Small straw tempered pots, similar to Delta productions, have emerged from Tel Ma‘ahaz.¹¹⁷ This typical Egyptian kitchenware made locally pointing toward the presence of populations of Egyptian culture in Palestine at the end of the Fourth millennium. Lastly, there may be some ceramics that can be qualified as “hybrid” (‘Erani),¹¹⁸ though this definition bears a certain subjectivity.

In the lithic industry, four sites (‘En Besor III, Tel ‘Erani, Sakan, Tel Halif)¹¹⁹ have yielded Egyptian material. Particularly closely evaluated at Tel ‘Erani by S. Rosen¹²⁰ are lithic sets, which beside the Palestinian-types reveal some 20% of Egyptian-type lithic tools.¹²¹ These are composed of lithic tools imported from Egypt (minority group as in ceramics), and locally made tools (blade industry essentially including many sickle-blades). This material clearly shows that an “Egyptianized” population—and probably an Egyptian population—as explained by Rosen were involved in crafts and in agricultural activities in Palestine (the difference in the raw material preference¹²² suggesting that different craftsmen were involved in the manufacture of different tool-types).

Ten Palestinian sites¹²³ have also yielded *serekhs* of the late Dynasty 0 kings, inscribed generally on imported jars (that of Narmer’s is the most current but we also find that of Ka/Sekhen’s as in Lod¹²⁴). At Khorwat Illin Tahtit and Palmahim Quarry 2, the *serekhs* are inscribed not on Egyptian containers but on locally made storage jars,¹²⁵ indicating that Egyptian administration was at work in Palestinian territory. Likewise, a major glyptic element, including ivory labels, locally made seal impressions and cylindrical seals of Egyptian functionaries has been found at ‘En Besor III, Sakan, Tel Halif and Gezer.¹²⁶

114. Van den Brink 1989: 71.

115. Petrie 1953: Pl. 1.

116. i.e., Afridar (Porat 1989: Appendix 2a). Tel Ma‘ahaz (Beit-Arieh and Gophna 1999: 201, Fig. 9: 4–5–6–7). Tel ‘Erani (Brandl 1989: 373, Fig. 12, 12. ‘En Besor III (Gophna 1995: 73, Fig. 1). Tel Halif (Gophna 1995: Fig. 2: 5).

117. These pots of Tel Ma‘ahaz (Beit-Arieh and Gophna 1999: Fig. 203, Fig. 10: 12) find their parallels in the phase IIId of Buto (Köhler 1998: Pl. 16: 11 to 14). Two other models (Beit-Arieh and Gophna 1999: Fig. 203, Fig. 10: 13–14) find their parallels in the phase 4 of Buto (Köhler 1998: Pl. 18: 38–41).

118. Brandl 1989: 377–378, Fig. 15–16.

119. ‘En Besor III—Yeivin 1995: 102, Fig. 1; Tel ‘Erani—Rosen 1988: Pl. 108–13, Figs. 1–6; Sakan—Miroshedji and Sadek 2000 c: 99; Tel Halif—Levy et al. 1997: 42–3.

120. Rosen 1988: 105–116; Rosen 1997: 144.

121. Some 150 tools based on a total of 800 lithic tools.

122. The Egyptian sickle-blades of Tel ‘Erani are essentially made locally of a wadi flint, as opposed to the brown flint of the Palestinian blade industry (Rosen 1988: 112–114).

123. ‘En Besor III (Gophna 1976: 5). Sakan (Miroshedji 2000: 30). Tel ‘Erani V (Yeivin 1960: 195). Tel Halif (Levy, Van den Brink, Goren, and Alon 1995: 31; van den Brink 1998: 219, Fig. 1). Tel Malhata I (Amiran, Ilan and Carmon 1983: 82). Tel Ma‘ahaz (Schulman and Gophna 1981: 167). Palmahim Quarry 2 (Van den Brink 1998: 220, Fig. 2a). Khorvat Illin Tahtit (Van den Brink 1998: 220, Fig. 2b). Arad IV (Amiran 1974: 5). Lod (Yannai 2000 personal communication).

124. Van den Brink and Yannai 2000 personal communication.

125. Braun (1996: 144) presents this material as “locally made storage jar of Egyptian style”.

Other goods imported from Egypt include rectangular stone palettes with incised lines around the edges, pear-shaped mace-heads, stone vases, faience artefacts, stone amulets and figurines, and Nile shells.¹²⁷ Finally, several sites (‘En Besor III, Sakan, Afridar, Lod)¹²⁸ have revealed brick buildings carried out in the Egyptian designs and techniques. Once more, these findings underline the Egyptian presence within Palestine in the Late EB I.¹²⁹

A study of the archaeological data demonstrates the gradual impact of the Egyptian occupation in areas distant from the Sinai corridor. In Gaza, the fortified village of Tell es-Sakan (around 10 hectares)¹³⁰ reveals material that is some 90% Egyptian (of which ca. 75% is locally made). Tell es-Sakan may have been (or may have become after conquest) a major stronghold for the Egyptian military/administration. In the north Negev at ‘En Besor III,¹³¹ the material discovered in a small outpost includes around 90% Egyptian material including administrative sealing-stamps bearing the names of functionaries. ‘En Besor, next to the most important water-source in the north of the Negev desert, is situated stratigically for controlling goods passing through by the Sinai corridor.

On other sites of the coastal plain and of the Shephela (e.g., Halif, Ma‘ahaz, ‘Erani, Lod) the material is mixed, of both Egyptian and Palestinian traditions, with a majority of Egyptian-type material (ca. 75% on average).¹³² E. Yannai’s observations¹³³ at Lod, an establishment located south of the Yarkon river which seems to mark the most northern point of the

126. *‘En Besor III*—Gophna 1995: 124, Fig. 1 (cylinder seal); P. 129, Fig. 1; P. 149, Fig. 1; P. 158, Fig. 2; P. 197, Fig. 1; P. 198, Fig. 2 (seal impressions). For the chronology of the Egyptian glyptic discovered in southern Palestine, see Van den Brink in Gophna 1995: 201–214; *Sakan*—Miroshedji and Sadek 2000 c: 99 (seal impressions and one ivory label); *Tel Halif*—Levy et al. 1997: 17, Fig. 15; P. 19, Fig. 16a (seal impressions and one cylinder seal); *Gezer*—Brandl 1992: 456: 1–2 (seal impressions).
127. *Stone palettes*—Tel Halif (Jacobs 1996: 123, Fig. 1). Lod (Yannai 2000 personal communication). Assawir (Yannai 2000 personal communication). Jericho VII (Hennessy 1967: 32, Pl. XXVI: 1). Beth-Yerah (Greenberg 1998 personal communication); *pear-shaped mace-heads*—Tel Halif (Levy, van den Brink, Goren and Alon 1995: 29). ‘En Besor (Gophna 1995: 32, Fig. 3). Lod (Yannai 2000 personal communication); *stone vases*—Lod (Yannai 2000 personal communication); *faience artefacts*—A faience statuette at ‘En Besor III (Gophna 1995: 216, Fig. 1 and a faience vessel at Tel Halif (Levy et al. 1995: 29); *stone amulets and figurines*—A bottle-amulet pendant at Tel Halif (Levy et al. 1997: 20, Fig. 17: 2). Bull-amulets at Tell el-Asawir and ‘En Besor III (Andelkovic 1995: 28, Fig. 3: 3 and P. 38, Fig. 11: 18). A frog-figurine at Tell es-Sakan (Miroshedji 2000: 30). This frog-shaped figurine finds parallels in Egypt at Abydos (Needler 1984: 372, no. 300) and Hierakonpolis (Quibell 1898: 7, XVIII, no. 10–11–14); *Nile shells*—Palmahim, Tel ‘Erani and Lod (Bar-Yosef 1998 personal communication; Yannai 2000 personal communication). We note that a catfish barb was also discovered at Lod (Yannai 2000 personal communication).
128. *‘En Besor III*—Gophna 1995: 61–68; *Sakan*—Miroshedji and Sadek 2000 c: 99; *Afridar*—Gophna 1998 personal communication; *Lod*—Van den Brink 1998 personal communication.
129. We note that no Egyptian tombs have yet been discovered in Palestine. At Tel Halif, the so-called “Egyptian tomb” hasardously advanced by Levy (1997: 14–16), proves to be a simple EB I cave dug in the middle of the village.
130. Miroshedji and Sadek 2000 c: 98–101.
131. The oasis of ‘En Besor is a contact-point between merchants of Lower-Egypt and Palestine during the EB Ia (‘En Besor-Site H). It appears to loose this function in the course of the EB Ib1 (‘En Besor IV) where the oasis apparently yields no sign of a relationship with Egypt, and then is in contact once again with Egypt (probably dominated by the Abydos administration) in the course of the EB Ib2 (‘En Besor III).
132. Van den Brink 1998 personal communication.
133. Yannai 2000 personal communication.

Egyptian influence in Palestine,¹³⁴ demonstrates that the distribution of the material on the site is variable. Certain areas of Lod reveal concentrations of Egyptian material of up to 100% (imported and locally made for the most part), others yield a proportion of 50%, and some contain no Egyptian material at all. This distribution of materials of different traditions on a single spot rise the question of the relation between apparently segregated populations living within the same village.

On the site of Tel 'Erani, the excavation of the Middle EB I layers (Tel 'Erani C = Yeivin IX-VII = EB Ib1) reveals that the village met a violent end, and then was reconstructed during the Late EB I (Tel 'Erani B = Yeivin VI-V = EB Ib2).¹³⁵ The fact that Tel 'Erani was ruined during the EB Ib then re-occupied by a population with a strongly culturally Egyptian background, identifiable by imported and locally-made ceramics and lithic tools, may be coincidental and then not linked. Nonetheless this may point to an invasion from Egypt followed by a local settlement of Egyptian populations on the site over several generations (?).¹³⁶

This distribution of material also poses the question of the ethnicity of the populations of southern Palestine, a complex and archaeologically inconclusive point. We could see a culturally "Egyptianized" Palestinian population just as well as displaced populations from Egypt. In the latter case, and given the segregated nature of the material distribution, one could conclude that simple Egyptian traders were living in the villages; they could also be populations deported by the Abydos kings, originating from a recently annexed area (Delta?),¹³⁷ or might represent Delta populations fleeing from local turbulence during the period of Southern invasion. While the exact synchronism of population movements and influences cannot be established so far, we are actually inclined to think that the Egyptian presence in Palestine consists of two principal phenomenae that are inter-related: 1) the Abydos administration extension of authority over the Delta and beyond the Sinai into Palestine, and 2) an increase in migratory population moves among the populations of the Delta and Palestine, both affected by the Abydos annexation of territories.

In Egypt, a certain number of artefacts and the archaic writing dating from Naqada IIIc1 allow certain insights into the Egypto-Palestinian relationship. The first Egyptian documents dealing with Palestine are ivory decorative plaques discovered in the first funerary chamber which is said to be Narmer's tomb at Abydos (B 17)¹³⁸ representing bearded persons presenting (to the sovereign?) loop-handled EB I Palestinian jars.¹³⁹ The most logical interpretation of these iconographical elements sees them as Palestinian tribute bearers. The presence of imported Palestinian-type ceramics in "Narmer's tomb" is supported by the discovery of two wooden labels featuring images of Palestinian ceramic types. One of them is incomplete,¹⁴⁰ but the second one clearly features three elements:¹⁴¹ the name of the

134. Like Hendrickx (1998 personal communication), we reject the identification of an "Egyptianizing pottery" from the EB I temple complex at Megiddo (Goren 1997), an erroneous identification that has been echoed by certain researchers (e.g., Miroshedji).

135. Kempinski 1993: 420.

136. Likewise, we can notice at Tel 'Erani a clear phenomenon of acculturation represented by what Brandl calls "hybrid" jars, the most characteristic being a jar with a medium body bearing wavy-ledge handles on the mid-body (Palestinian characteristic) and a rim and a finish typical of a late Egyptian jar class (Brandl 1989: 375, Fig. 14: 10).

137. A current practice during the New-Kingdom.

138. Petrie 1901a: Pl. IV: 6-15; Petrie 1901b: Pl. IIIa: 2.

139. Ben-Tor 1992: 95, Fig. 4.9.

king in a *serekh* (Narmer), a fortified wall of elliptical shape with towers, and a ledge-handled jar of EB I Palestinian-type. This type of semi-elliptical wall with towers is well-known in Palestine throughout the Late EB I/Early EB II (e.g., Arad¹⁴²). Such documents, considered in view of the massive quantities of Palestinian goods in Abydos tombs of preceding (Naqada IIc–IIIa) and succeeding (Dynasty I) periods, may indicate that Palestinian territories were subjected to the authority of the Abydos administration.

This notion may be affirmed by the Narmer Palette.¹⁴³ On one side, in the upper-register, the falcoform sovereign¹⁴⁴ masters an enemy (a man's head attached to the symbol of the Delta, *Ta-mehu*¹⁴⁵). Above this register, the sovereign in his human form dominates an enemy¹⁴⁶ with a mace. The lower register features two fleeing persons, one labeled by a rectangular fortified wall and one labeled by a papyrus. This scene was linked to the Levant by Y. Yadin¹⁴⁷ and R. Weill,¹⁴⁸ but may represent territories of the Delta, as expressed by W. Kaiser¹⁴⁹ and W. Ward.¹⁵⁰ There is also the possibility that the man on the left represents defeated Palestinian territories,¹⁵¹ and that the man on the right represents defeated Delta territories.¹⁵²

The other side of the upper-register features a victory parade and beheaded enemies.¹⁵³ The lower-register depicts the king in bull form destroying the wall of a semi-circular fortress with towers and trampling a bearded enemy. The trampled person, contrary to other

140. Petrie 1901a: Pl. XII: 4.

141. Petrie 1901a: 4; Pl. X: 1.

142. Arad III (Amiran 1978: 10–11, Fig. 1). Amiran 1970b: 92–93, Fig. 6, Pl. 10). If the defensive systems of EB II are archaeologically better-known (and more accessible), the fortified settlements appear in Palestine from the EB I, as shown by the excavations at Tel 'Erani VI–V (Yeivin 1993: 421), Tel Shalem (Eisenberg 1996: 6–8, 20–21) or Tell el-Sakan (Miroschedji and Sadek 2000 c: 98–101).

143. This palette was discovered by Quibell in the “foundations” of a Hierakonpolis temple alongside several other objects including a “Lycaon palette” and some hundred maceheads, of which two are ceremonial (Quibell 1898: 81–84, Pls. XII–XIII).

144. Godron 1949: 219.

145. Quibell 1898: 82. The Delta symbol is composed of the sign for “land” with six papyrus plants.

146. The King's enemy is labeled by a hooked object above a rectangle with a wavy relief.

147. Yadin (1955: 4–8) identifies this sign as Palestinian structures (the so-called “Desert Kites”), which seems way off the mark to us. This sign is more closely related to an image of papyrus such as those found in the upper register of the palette. Furthermore, it appears that the “Desert Kites” must be linked to a period posterior to the Fourth millennium. Last, an incision on one of the two enemies' penis may have been the artist's way of identifying the person as of Egyptian tradition.

148. Weill (1961: 20) associates the two signs above the “fleers” as a combination of symbols signifying “the fortress of the Easterners”.

149. Kaiser 1964: 90. Kaiser in a purely speculative manner identifies the cities of Memphis and Sais (?).

150. Ward 1969: 209.

151. The second man featured in the scene is hard to identify with certainty, but we believe that both sides of the Narmer palette commemorate a double victory for Abydos: certainly over the western Delta, and secondly over territories east of the Nile, meaning the Sinai corridor and possibly the Palestinian coastal plain.

152. At least one of these fleeing characters is from the Delta, given the papyrus symbol and the evident circumcision.

153. Kaiser (1964: 90) and Kaplony (1998 personal communication) think that the scene of beheading takes place at Buto. Quibell (1898: 10) for his part, placed it at Abydos.

characters on the palette, is represented as not circumcised, and thus probably not Egyptian. The particular shape of the fortified wall attacked by the king/bull (semi-circular with towers) echoes the type of fortifications found in Palestine during the period of Naqada IIIc.¹⁵⁴ The Narmer palette features a symbol inside of the trampled fortress walls, which may be another element representing lands East of the Nile Valley; the symbol is possibly a primitive form of “*Setjet*”, which traditionally designates Asia (conclusion reached by P. Kaplony¹⁵⁵ as well). We furthermore find this sign on the “Cities palette” which presents a list of conquered territories.¹⁵⁶

The “unification” of Upper and Lower-Egypt was certainly not the principal goal of the Abydos kings, and it is probable that the notion of unification came after the fact. The integration of peripheral territories was achieved by similar methods toward south in Nubia as well as toward the north in the Delta and northeast in Palestine, so we can see an “all-directional expansion” rather than a “targeted unification”. The military influence of Abydos spread along the commercial routes, by land as well as by river. An insight into the functioning of the Abydos expansion can be gleaned from administrative/military “outposts” along these commercial routes, by which taxes and tributes were levied. These outposts were generally strategically placed though not conceived for defense or warfare, which could mean that the population was already partially or wholly subject to Abydos, whose authority grew progressively from trade, to pillage, and then to direct rule. The Abydos kings doubtless found this arrangement to be more profitable than any non-coercive trading-model. The siphoning of surplus in occupied territories amounted to a continuous drain on subjected territories. In that sense, it is probable that the expansion leading to unification occurred with material profit in mind rather than for ideological or even defensive considerations.

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154. The semi-circular fortress symbol, presumably for Palestine, is further represented on several labels of King Den, 5th king of the First Dynasty (Petrie 1900: Pl. XI: 14–15 and Pl. XV: 16–17; Wilkinson 1999: 156–157, Fig. 5.1).
155. Kaplony 1998 personal communication.
156. The possible protosymbol of “*Setjet*” is featured on the Cities palette inside a town wall, dominated by a lion bearing a hoe. The “Cities palette” is iconographically identical with that of Narmer and to the “Bulls palette” of the Louvre, and this to such a point that we think that the same artist (or the same workshop) created the three palettes. We can find no substantial evidence of a “King Scorpion II”, the would-be king of the Cities palette according to Dreyer (1998: 174–175). Furthermore, the idea of a “King Scorpion II”, based on the second mace of Hierakonpolis, is very speculative (Baumgartel 1960: 9–13). Indeed, the mace in question is similar to the Narmer mace, probably made by the same workshop or artist, as is the case with the above mentioned palettes, probably under Narmer. Likewise, we reject, as does Wilkinson (1993: 241–243), another doubtful interpretation by Dreyer maintained by Hendrickx (1999: 241) and by Serrano (2000: 38) concerning two isolated hieroglyphic symbols (i.e., without a *serekh* mark) incised on potteries of tomb B1/2 of Abydos, supposedly identifying yet another king, colorfully designated “Iry-Hor”.

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La transition du Bronze Récent II au Fer I dans le Sud de la Palestine: Étude des processus

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Résumé

La compréhension du passage du Bronze Récent II au Fer I a souvent été évacuée dans la littérature archéologique par une caractérisation simpliste, à savoir celle d'une période historique complexe. Cette dénomination de "complexe" n'apporte que peu d'éléments permettant d'éclairer cette période. Il s'agit donc de comprendre les processus à l'œuvre au sein des différentes sphères de la société au cours de trois siècles cruciaux, soit du XIII^{ème} au XI^{ème} siècle av. J.C.

La recherche porte sur le sud de la Palestine mais les processus en jeu restent globaux et affectent l'ensemble du Levant sud. Il est possible d'isoler trois grands processus.

- Une réorganisation du paysage démographique continuant de reposer sur un peuplement humain existant au Bronze Récent II. Les apports de populations nouvelles demeurent démographiquement mineurs.
- Un grand *facteur commun* partagé par toutes les régions est le retour à une autonomie. Le Fer I initie en effet en Palestine une période d'autonomie politique, culturelle et économique à partir du XII^{ème} siècle qui va durer jusqu'au VIII^{ème} siècle.
- La régionalisation, comme l'autonomie, concerne l'ensemble de la Palestine, qui se couvre d'une mosaïque d'entités socio-politiques distinctes.

La perception de la transition du Bronze Récent II au Fer I en Palestine a pendant longtemps reposé sur l'idée qu'elle était due à des changements de populations (Ward-Joukowski 1992). Cette vision postulait que la société du Bronze Récent, constituée d'une population majoritairement locale cananéenne, laissait la place, au Fer I, à deux nouvelles populations: les Philistins et les Israélites. Ces groupes auraient provoqué en Palestine une modification profonde non seulement de la composante humaine, mais également des sphères socio-politique et culturelle. Ces deux nouveaux groupes étaient définis par leur caractère ethnique, censé se trouver à l'origine de ces changements. La clé de la compréhension du Fer I, et plus largement du passage d'un âge à l'autre, reposait ainsi sur un critère ethnique. (Dever 1993: 24*; Dothan 1995: 41)

On sait actuellement à quel point la pertinence de cette vision est discutable (Bunimovitz 1990; Mazar 1997: 158). La caractérisation ethnique des groupes humains demeure certes une problématique pertinente pour la période des XII^{ème}-XI^{ème} siècles, puisque l'arrivée et l'installation des Peuples de la Mer dans la plaine côtière de la Palestine demeurent une réalité historique. Concernant les populations proto-israélites occupant à partir de la toute fin du XIII^{ème} siècle les hautes collines de Palestine, les tentatives de distinguer des éléments matériels exprimant une caractéristique ethnique originale sont actuellement rejetées (Finkelstein 1997: 221, 230).

Le point de vue traditionnel n'est donc que très partiellement vrai. Certes, les Philistins semblent bien représenter un cas d'école pour ce qui est de l'adéquation entre la culture matérielle et l'identification ethnique. Mais cette caractérisation ethnique ne vaut que pour les Philistins et non pour l'ensemble de la population de la Philistie qui reste selon toute probabilité majoritairement locale, c'est-à-dire cananéenne. L'apport humain des Peuples de la Mer, s'il n'est pas négligeable, n'est certainement pas majoritaire en nombre. En revanche, le dynamisme et les choix urbains opérés par cette nouvelle élite restent fondamentaux pour comprendre le devenir de la région. A partir d'un groupe ethnique minoritaire, la Philistie s'est donc vue profondément transformée. Sa population s'est forgée une nouvelle identité "ethnique", développant au cours du Fer I, des traits culturels propres, qui la distingueront, encore au Fer II, des autres groupes humains de Palestine. Il est ainsi indéniable que les Philistins ont influencé durablement la région.

Au regard de ces observations sur le Fer I, la vision manichéenne de la population de la Palestine, prétendument répartie en deux groupes ethniques monolithiques disposant chacun de sa sphère d'influence, ne peut qu'être rejetée. D'autres critères s'avèrent donc nécessaires pour caractériser à la fin du II^{ème} millénaire, la transition de l'âge du Bronze à l'âge du Fer.

Parce que cette période de transition a systématiquement reposé sur la recherche des discontinuités entre ces deux périodes, il s'avère nécessaire d'étudier précisément les composantes de la société du Fer I en rapport avec celle du Bronze Récent II. L'étude de la transition du Bronze Récent II au Fer I se doit de permettre de comprendre dans le détail la complexité des processus en jeu. Nous distinguerons pour cela trois processus majeurs.

La recomposition du paysage humain

Le premier processus propre au Fer I concerne la recomposition du paysage humain. D'une ampleur considérable, cette recomposition concerne l'ensemble de la population de la Palestine. Les processus touchant les régions sont de nature et d'intensités diverses. Rappelons brièvement les régions concernées et la manière dont celles-ci sont affectées.

La Philistie

La région la plus touchée par ce phénomène est la Philistie. Une urbanisation rapide s'y produit, près d'une génération après l'installation des Philistins et parallèlement à la céramique bichrome philistine, soit dans le dernier tiers du XII^{ème} siècle. C'est toutefois le XI^{ème} siècle qui voit l'extension maximale des frontières de la Philistie, de son pouvoir économique et culturel et du dynamisme urbain et architectural des établissements placés sous son contrôle. Les niveaux XI–X de Tel Qasile ou VI–V de Tel Migne/Ekron offrent à cet égard de bons exemples (Mazar 1985: 119–128; Dothan et Gitin 1986: 105; Killebrew 1998: 385). La concentration urbaine et la construction de remparts et d'édifices publics dans les établissements de Philistie renouent par certains aspects, notamment le dynamisme, avec les entités urbaines du Bronze Moyen. La nouvelle entité socio-politique se développant en Philistie se caractérise par trois aspects sur le plan démographique:

- a. Un apport substantiel de population
- b. Une redistribution régionale dans de grands centres urbains
- c. Enfin une importance numérique à l'échelle de chaque site, comme à celle de la région.

Les collines de Judée et le nord du Négev

Cette population fortement urbaine de Philistie est contemporaine d'une organisation fortement villageoise dans les hautes collines de Judée (Finkelstein 1988a). Le processus de sédentarisation donnant naissance à de petits sites villageois isolés, s'opère dès le début du XII^{ème} siècle. Un processus de nature identique se développe dans le nord du Négev, mais plus d'un siècle plus tard, à partir du milieu du XI^{ème} siècle, soit dans la seconde phase du Fer IB. Cette sédentarisation de populations nomades s'effectue toutefois pour des raisons différentes que dans les hautes collines, et certainement liées à une certaine prospérité économique dans le nord du Négev (Finkelstein 1988b: 241–246).

La Shéphéla

Les destructions touchant au XI^{ème} siècle le sud de la Shéphéla avec la destruction du niveau VI de Tel Lachish, entraînent un dépeuplement important de l'ensemble de cette région (Ussishkin 1985: 223; Finkelstein 1995: 229–232; Finkelstein 1998: 144–145). Cette zone est la seule de Palestine connaissant un tel processus au Fer I. Quant au nord de la Shéphéla, centré autour de l'ancienne cité-état de Gezer, il oscille entre un immobilisme politique, un conservatisme culturel et le retour à une certaine prospérité économique, mais son peuplement semble peu évoluer (Jasmin 1999: 225–226, 544–546).

Le Fer I pose ainsi le délicat problème de la nature d'ensemble de la population locale. Peut-elle être considérée comme cananéenne du fait de l'importance des continuités notamment dans la culture matérielle, ou doit-elle être envisagée comme différente du fait des nouveautés dans les sphères socio-politiques?

La réorganisation du paysage démographique continue de reposer sur le peuplement humain existant au Bronze Récent II. La composition de la population n'a que peu varié entre le Bronze Récent II et la fin du Fer I, soit entre la fin du XIII^{ème} et la fin du XI^{ème} siècle. Les changements ont été socio-politiques plus qu'éthniques, mais ils ont également pu porter sur les noms et les termes désignant les populations (Drews 1998). Le substrat humain local n'a ainsi selon nous pas fondamentalement varié.

Insistons sur le fait que si les populations ont peu changé dans leur composition, les structures sociales ont en revanche évolué, tout comme les mentalités. Les variations portent donc sur la répartition et la nature, davantage que sur le renouvellement, des groupes humains suivant les régions considérées. Il s'agit d'une recomposition globale du paysage humain. L'ensemble de la population cananéenne se voit donc affecté sous une forme ou l'autre, qu'il s'agisse de processus de concentration urbaine, de sédentarisation ou de mouvements de population à la suite de dépeuplements régionaux. Quant aux populations nouvelles, elles se limitent à des apports certes signifiants mais proportionnellement restreints. Nous sommes loin des hypothèses envisageant l'installation massive de populations non locales, que ce soit dans la plaine côtière ou les hautes collines.

Le retour à l'autonomie

Le second processus propre à la transition du Bronze Récent II au Fer I concerne l'autonomie des régions. On constate que les régions touchées les premières et le plus durement par les destructions occasionnées par les Peuples de la Mer, sont également les premières à connaître un redéveloppement économique. Ce développement économique et politique rapide de la plaine côtière du sud de la Palestine est certainement moins dû à la seule arrivée de populations nouvelles, qu'au retour à l'autonomie, tant politique qu'économique,

après la fin du contrôle égyptien sur cette zone. La Philistie devient, au Fer IB, c'est-à-dire à partir de la fin du XII^{ème} siècle, l'une des seules régions de Palestine entrant en concurrence active avec les autres. Elle dispose pour cela d'un territoire politique regroupant les cinq cités les plus vastes de Palestine à cette période, développant une puissance économique et une influence culturelle sur les régions limitrophes (Dothan 1997: 97; Dothan 1998: 148–149).

Ainsi, la première grande nouveauté du Fer I au XII^{ème} siècle—la seule qui ne peut être minimisée—est l'autonomie, elle est liée au retrait égyptien de la côte, à la suite de l'installation des Peuples de la Mer (Finkelstein 1995: 213–215, 231; Finkelstein 1998: 141–143; Dothan 1998: 150–151). Cet événement est synonyme du développement d'une entité politique autonome, après plusieurs siècles de contrôle égyptien. Les autres cités-états de Palestine restent pour leur part sous le contrôle plus ou moins efficace de l'Égypte durant la première partie du XII^{ème} siècle, correspondant au Fer IA. Quant aux villages des hautes collines, ils sont à l'époque du XII^{ème} et encore du XI^{ème} siècles, trop peu développés pour représenter une force numérique importante à l'échelle de la Palestine. Leur autonomie ne les conduira à une puissance politique unitaire que par la suite.

La fin de la présence égyptienne en Palestine initie donc une période de plusieurs siècles pendant laquelle le Levant Sud ne se trouvera sous le contrôle d'aucune grande puissance (Singer 1994: 295). Aucune entité politique ne sera du moins assez puissante pour imposer son contrôle à d'autres. Seules les conquêtes assyriennes au VIII^{ème} siècle mettront fin à cette autonomie politique, rare dans l'histoire de la région. Fait notable, cette absence de contrôle au Fer I constitue le préalable au développement d'une entité politique au Fer II, la monarchie israélite réunissant le nord et le sud de la Palestine.

La retour à l'autonomie touche donc toute la Palestine, constituant ainsi un processus global, qui représente le grand *facteur commun* partagé par toutes les régions. L'autonomie les affecte cependant inégalement, puisque chacune d'entre elles en profite différemment.

La régionalisation

Le processus de régionalisation apparaît comme le troisième processus, et le plus caractéristique, de la transition du Bronze Récent II au Fer I. La régionalisation, comme l'autonomie, concerne l'ensemble de la Palestine, qui se couvre alors d'une mosaïque d'entités socio-politiques distinctes.

Notons que les troubles que connaît la Palestine à l'extrême fin du XIII^{ème} siècle, s'ils s'apparentent à ceux de l'ensemble du Levant, ne sauraient pourtant leur être assimilés dans leur déroulement. Le nord et le sud de la Palestine proposent à cet égard des processus très différents, autant que le Levant nord se distingue du Levant sud. Chaque région traverse ainsi la fin du second millénaire d'une manière propre. C'est pourquoi le processus de régionalisation socio-politique constitue l'une des caractéristiques majeures de cette période. Ce phénomène persiste l'ensemble du XII^{ème} siècle et culmine vers la fin du XII^{ème} siècle et au XI^{ème} siècle, c'est-à-dire durant le Fer IB.

Au Fer I, la seule région connaissant un développement économique et politique considérable est la Philistie, les proto-Israélites jouant un rôle encore mineur. C'est dans un tel contexte socio-politique que doivent être considérés les sites de la Shéphéla car au XI^{ème} siècle, leur rôle est loin d'être négligeable. Une telle perspective implique que les continuités culturelles cananéennes ne sauraient être négligées dans une reconstitution du Fer I.

Une région comme la Shéphéla, dont l'organisation politique du territoire était la plus intégrée au système des cités-états cananéennes (Finkelstein 1996b: 233), n'arrive toutefois pas à surmonter ce qui devient pour elle un handicap au Fer I. C'est elle qui sera la plus profondément et la plus durablement affectée par la crise du XII^{ème} siècle. Région centrale au Bronze Récent, et dernière touchée par les transformations du nouvel âge, la Shéphéla est profondément perturbée par les phénomènes de parcellisation qu'elle subit. Elle est devenue, au Fer IB, une région trop divisée pour être à même de se développer à nouveau.

Le Fer I se marque également par un phénomène de "déplacement du centre": affaiblissement de certaines régions, renforcement ou développement d'autres. On constate tout particulièrement le développement de régions d'importance mineure auparavant, surtout situées sur les bordures du monde sédentaire. Ces zones en marge, telles les hautes collines ou le nord du Négev, sont parmi les plus dynamiques de Palestine au Fer IB, par les processus de sédentarisation ou de prospérité économique qui s'y déroulent. A l'échelle des régions du sud de la Palestine, le Fer I, comme le sera le Fer II, représente donc un déplacement important du centre politique.

Dernière dimension de ce phénomène de régionalisation, le décalage chronologique qu'il induit entre les différentes sphères, politique, économique, sociale et culturelle, au sein de chaque région, chaque région évoluant à sa vitesse propre et selon des modalités diversifiées (Tableau). Cette absence d'unité est également caractéristique de la phase de transition du Bronze Récent au Fer I.

Le Fer I, "âge sombre" de la transition?

Qu'en est-il de l'appellation "d'âge sombre" pour caractériser la transition de l'âge du Bronze à l'âge du Fer?

Cette période concerne, en Palestine, spécifiquement le Fer I. Il est tacitement admis que cette période de deux siècles correspondrait au "creux de la vague", à cet "âge sombre" qui, dans le monde égéen, serait particulièrement isolé du fait de son caractère dévastateur (Muhly 1992: 21). Si âge sombre il y eu en Palestine, une telle phase concernerait non l'ensemble du Fer I mais seulement une partie du XII^{ème} siècle. Le Fer I ne saurait être considéré comme un âge sombre, du fait du retour à une autonomie concernant globalement l'ensemble des sphères de la société. Cette autonomie marque en effet la fin d'un déclin: déclin politique et urbain, exploitation économique par les Egyptiens, problèmes sociaux qui touchent la Palestine durant le Bronze Récent. L'autonomie retrouvée offre en revanche les conditions nécessaires, dans le long terme, à un développement fondé sur l'unification de l'ensemble de la population. Le Fer I marque également l'émergence d'entités mineures qui deviendront des entités politiques majeures au Fer II, tel le domaine des hautes collines: raison supplémentaire de ne pas réduire le Fer I au prétendu "âge sombre" qu'il a pu représenter.

Le passage du Bronze Récent II au Fer I marque-t-il une phase de transition?

Un dernier problème concernant le passage du Bronze Récent II au Fer I, est de savoir s'il marque bien une phase de transition.

Sur un plan strictement politique, lié à l'extension des territoires, le Fer I représente bien une période de transition entre le système politique des cités-états-mode unique de gestion du territoire unifiant au Bronze Récent l'ensemble de la Palestine-et le Fer II, qui voit l'édification d'un état gouverné par la monarchie israélite. Plus globalement, l'ensemble du

Tableau des évolutions des différentes régions du sud de la Palestine du BR II au Fer I

Chronologie	1200/1185	1150	1130	1100	1050
Plaine côtière	BR IIB	BR III	Fer IA	Fer IB	
Céramique	Myc. IIIB	IIIC ?	Myc. IIIC:1B	→ Bichrome (production)	
Domaine politique	Cités-états et contrôle égyptien		Cités philistines	→ Autonomie politique	
Domaine économique	Commerce en Méditerranée		Dynamisme intrarégional	Dynamisme interrégional	
Domaine social	Sédentaires et nomades		Régroupement urbain	→ Dynamisme urbain	
Domaine culturel	Cananéens		Philistins/ cananéens	Nouvelle entité ethnique et culturelle reposant sur une population mixte	
Shéphéla	BR IIB	BR III		Fer IB	
Céramique	Myc. IIIB Cér. locale	Cér. locale		Bichrome (utilisation) → Cér. locale	
Domaine politique	Cités-états et contrôle égyptien			Autonomie / contrôle philistin ?	
Domaine économique	Commerce en Méditerranée	Repli économique Comm. intrarégional		Commerce interrégional	
Domaine social	Sédentaires et nomades			Conservation des hiérarchies sociales	
Domaine culturel	Cananéens	→ Cananéens		→ Continuité culturelle cananéenne	
Hautes collines de Judée	BR IIB	BR III/ Fer IA		Fer IB	
Céramique	Myc. IIIB Cér. locale	Cér. locale		Bichrome (utilisation) → Cér. locale	
Domaine politique	Cités-états et contrôle égyptien Villages proto-Israélites			Coexistence anciennes cités-états et nouveaux villages → Formation entité proto-étatique	
Domaine économique	Commerce en Méditerranée	Repli économique		Repli économique	
Domaine social	Sédentaires et nomades	Processus de sédentarisation		→ Egalité sociale dans les villages	
Domaine culturel	Cananéens	→ Cananéens (proto-Israélites)		→ Proto-Israélites	
Plaine côtière du nord du Négev	BR IIB	BR III		Fer IB	
Céramique	Myc. IIIB Cér. locale	Cér. locale		Bichrome (utilisation) → Cér. locale	
Domaine politique	Cités-états et contrôle égyptien			Centres urbains avec une autonomie politique	
Domaine économique	Commerce en Méd. Exploitation économique égyptienne	Nouvel axe de communication, commerce à longue distance		Autonomie économique	
Domaine social	Sédentaires et nomades	Processus de sédentarisation		→ Création de nouveaux villages	
Domaine culturel	Cananéens, influence égyptienne			→ Cananéens	

Abandon ou rupture :

Continuités : →

Fer I, en tant que phase de transition, clôt certaines pratiques, en continue d'autres, en initie de nouvelles.

Il faut toutefois insister sur d'autres plans, la période des XII^{ème}–XI^{ème} siècles présente suffisamment de traits originaux et spécifiques pour se voir attribuer une existence et une identité distinctives. Le Fer I ne doit donc pas être considéré comme la simple période de transition à laquelle tend à la réduire la recherche archéologique. Pendant longtemps, en effet, seul son caractère destructeur et ses conséquences négatives ont été mis en valeur, or c'est également une période productive puisqu'elle initie des dynamiques nombreuses, notamment par la création de nouveaux sites, processus quasi inexistant au Bronze Récent. Cette période fut certes un âge prospère, mais par certains aspects seulement, et surtout pour l'élite urbaine minoritaire. Le Fer I pose, quant à lui, des fondements nouveaux.

Conclusion

Le Fer I n'est donc pas simplement une phase de transition. Les XII^{ème}–XI^{ème} siècles sont également des phases de gestation, avec une redéfinition des groupes socio-politiques, à partir d'une nouvelle répartition des populations. En effet, le passage en Palestine du système des cités-états à un état s'effectue sur une période de plusieurs siècles, ne se limitant pas au seul Fer I. Mais cette période prend toute sa dimension historique par une mise en perspective chronologique, qui va du Bronze Récent II au Fer II. Ce qui se met en place au Fer I concerne la longue durée et affecte la Palestine pour les siècles à venir: la Philistie et le domaine des hautes collines sont le lieu de lents processus transformant la société en profondeur, et concernant de toute évidence les mentalités. Quant au Fer II, il ouvre un "nouvel âge" pour l'ensemble de la Palestine, développant une culture relativement homogène. Le Fer I s'inscrit de ce point de vue dans des continuités tout en préservant son originalité.

Résumons nous: la transition de l'Âge du Bronze à l'Âge du Fer en Palestine n'est pas marquée par des changements ethniques profonds. Elle connaît en revanche un processus de régionalisation, suivant des chronologies et des modalités différentes. Ce processus se double d'une profonde recomposition du paysage démographique au Fer I, héritée directement de la population cananéenne du Bronze Récent. Le retour à une autonomie politique et économique représente également l'une des caractéristiques majeures de cette période. Tous ces processus touchent l'ensemble des sphères de la société, mais à des degrés divers. En définitive, au cours du Fer I, les régions de Palestine développent un nouvel équilibre régional. Mais paradoxalement, ce dernier repose sur un déséquilibre entre chacune des régions concernées.

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A Middle Kingdom Settlement at Ezbet Rushdi in the Egyptian Nile Delta: Pottery and some Chronological Considerations

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Abstract

The recently excavated Temple of Ezbet Rushdi in the Egyptian Nile Delta was constructed above older settlement remains, which can have been in use only in the first half of the 12th dynasty. An extensive collection of pottery can be shown from this settlement, comprising all types of domestic pottery. Particularly rich is the collection of hemispherical cups, a type which is considered of most chronological value. Therefore, within the given chronological frame, different approaches for a more accurate dating of the several substrata and the definition of a precise starting- and endpoint of the cultural development represented by the material, can be tested.

Ezbet Rushdi is a small village about 1 km north-east of Tell el-Dab'a. In the 1950s, the Egyptian Archaeologist Shehata Adam had discovered a temple in the fields east of the village.¹

In 1996, the Austrian Archaeological Institute under the directorship of Manfred Bietak decided to reexcavate that temple. Within 2 seasons, 24 squares were investigated. The temple structures, consisting of thick mudbrick walls, were clearly recognisable and a new map of the temple could be made, which is much more accurate than the previous one.² The temple turned out to have been built in two consecutive phases. The original building comprised the sanctuary with two adjoining chapels and a forecourt, surrounded by a huge enclosure wall. A corridor between this wall and the central structure most probably points to a staircase leading to the roof. After a while, this first temple was enlarged and modified. The forecourt was filled up with two lateral structures, probably storerooms. The central part of the court seems to have been equipped with surrounding colonnades rather than changed into a hypostyl, since instead of a middle column a central water basin was found. The whole structure was surrounded by a new enclosure wall, which, on the front, shows a much greater thickness indicating perhaps a Pylon-like appearance. In the north-western corner of the new forecourt, a secondary sanctuary was introduced with a bent cult-axis³ (Fig. 1).

1. Adam, Shehata 1959. ASAE 56: 207–226

2. Bietak, Manfred et.al. 1998. Der Tempel und die Siedlung des Mittleren Reiches bei 'Ezbet Ruschdi. Grabungsvorbericht 1996. E&L 8: 15, Fig. 4.

3. Bietak et. al. 1998: Fig. 4.

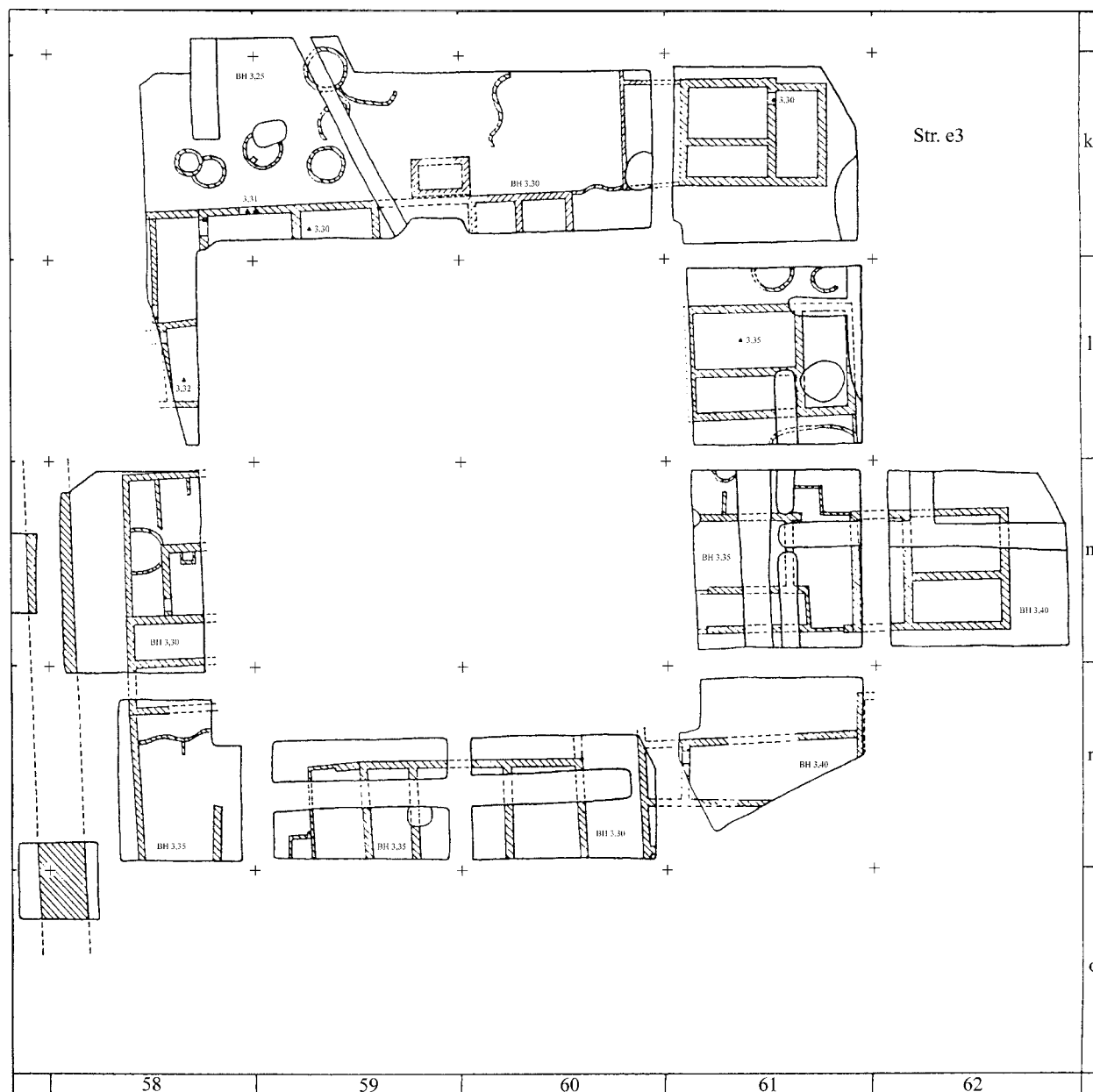


FIGURE 2. Ezbet Rushdi, str. e/3 (MK-settlement beneath the temple, second phase).

nasty. Obviously, the layers disturbed by the temple are the older ones, and they show a development of their own, which had taken some time.

The stratigraphy of the temple was divided into two levels: the construction of the temple in two different phases and a short time of its first use was called stratum c, whereas stratum b refers to the long time, during which the temple had been in use, at least till to the end of the 12th dynasty.⁴ Therefore, str. c is basically architectural evidence, unlike str. b, which contains most of the finds which were brought into the temple during its use. Very few items of pottery dating back with certainty to the time of the foundation of the temple have been isolated.

4. Bietak et. al. 1998: 12.

Consequently, the dating of the temple is chiefly based on the interpretation of the text of a stela, which had already been found in the temple during the first excavation.⁵ The text begins with a datum: year 5, month 2 of the Smw-season under king Senwosret III. It follows a measure in cubits or square cubits of something which is called “Hwt Jmn-m-HAt-mAa xrw” (literally “House of Amenemhat the blessed”),⁶ and which could very well designate the temple itself. If one accepts, that the stela was found at the place of its original installation, we can learn from it the name of the temple as mentioned above, the name of the town in which the temple stood (RA-wAtj) and a chronological fixed point. As Prof. Bietak was able to demonstrate, the cubits, if understood as a square measure, correspond to the ground surface of the temple in its early phase.⁷ It is nevertheless possible, that the temple was already finished, when the necessity arose to fix the land record in a stone stela, perhaps after some litigation. The year 5 of Senwosret III (that is 1867 B.C. according to Kitchen’s chronology)⁸ can therefore be considered as the latest possible one and at the same time as the most reasonable one for the foundation of the temple.

The settlement beneath the temple which had been destroyed by it, seems to predate it immediately. Apparently, it continues to exist outside of the temple enclosure Fig. 1, square o/59). This settlement, which has been excavated only to a very small part, consists of a sequence of layers, where the different buildings are founded on the deepest strata directly above the gezirah and show considerable enlargements and modifications with the course of time. This phase of continual modification was for convenience divided into four substrata, called e/1 to e/4⁹ (cf. Fig. 2 showing str. e/3 as an example). This sequence of layers, from the gezirah, where the oldest buildings are founded, to the level from which the foundation trenches of the temple walls cut into the ground, has a thickness of approximately 70 to 90 cm. This thickness, as well as the obvious changes in the architectural record, show, that the settlement existed for several decades before the foundation of the temple. If one counts schematically 40 years, that is 10 years per substrata, one would reach the year 1907 B.C. or the early years of the reign of king Amenemhat II. The settlement would have had its “floruit” under his reign and that of Senwosret II, till, under Senwosret III, the plot of 711 m² mentioned in the stela, was levelled and used for the construction of a temple. Accordingly, the end of the settlement under that plot as well as the end of the pottery sequence found in it, is connected with a precise relative (and most probably also absolute) datum. Shortly afterwards, the temple was enlarged towards the north and a new precinct was erected, almost doubling the ground area of the temple to 1300 m². The pottery which was found beneath that temple enlargement does not show any difference to that beneath the original plot.

Outside of the temple estate, nothing changed, and the settlement continued to exist. These parts, however, have been hardly touched by the Austrian excavations.

The finds from the settlement mainly consist of pottery, flint implements and animal bones. Pottery was found in very large quantities. From more than 1000 contexts, about 80% belong to the strata beneath the temple, that is the settlement. This very huge quan-

5. Bietak et. al. 1998: 15ff.

6. This name, together with some other epigraphic material found in the temple, which mentions the name of King Amenemhat I, the first king of the 12th dynasty, led Shehata Adam to suggest to date the foundation of the temple under that king: Adam 1959: 216, 221ff.;

7. Bietak et. al. 1998: 18.

8. Kitchen 2000.

9. Bietak et. al. 1998: 15.

tity deriving from a stratified excavation, will make it possible to give a very minute account of fabrics and types.

The stock of sherds is complemented by an also considerable amount of vessels, whose shapes could be completely or almost completely reconstructed. Most rims, which are found in the sherd collections, correspond to at least one complete or reconstructed vessel, on which the typological work therefore basically relates. It turned out quickly, that the variety of shapes is rather restricted and that the production seems to have been of great uniformity.

The most common type, literally present in all of the contexts, are the hemispherical cups¹⁰ (Fig. 3/1), which are so typical for the Middle Kingdom. They are made of fine Nile clay fabric, mostly Nile b2 in the terminology of the so called Vienna System, but in a few examples also of the Nile b1 fabric. No less than 233 complete or reconstructed examples were found. Just as common are large so called beer bottles of coarse Nile c fabric.¹¹ However, the state of preservation is very different: while the hemispherical cups could very often be reconstructed, the bottles were in most cases hopelessly fragmented, and only very few vessels could be glued together. Consequently, variants are discernible only in the rims (Fig. 4/12–14).

Red washed carinated cups with a foot, which might be called “chalices”,¹² also have been found regularly, although they are considerably less common than the hemispherical cups. These vessels are made of fine Nile clay fabric and always red washed (Fig. 3/2). Apart from these, fine ceramics show a few special types, which are only rarely found, like bowls with an incurved rim (Fig. 3/3), small carinated cups (Fig. 3/4), conical beakers, and some more. Very typical are hemispherical bowls of different size,¹³ which are always red washed and show an incised decoration of horizontal grooves below the rim (Fig. 3/5, 6).

The rare container shapes of fine or middle Nile clay fabric include vases with a pronounced rim (Fig. 3/7), or jugs with a handle and a flat base, always red washed.¹⁴

Sherds of coarse Nile clay fabric belonged almost exclusively to container vessels. Although only very few examples could be reconstructed, body sherds are very common (in most of the contexts more than 50% of all sherds). According to the preserved rims, most of the vessels seem to have been bottles with simple rims, which I already mentioned. Beside these bottles, there are large dishes, bowls with a footed base (Fig. 3/8), and large, heavy carinated bowls, which are always red washed and often decorated with incised horizontal or wavy grooves (Fig. 3/9). Rare special types are large beakers, large ring stands, and a few types of pottery with special functions, like large backing trays, bread moulds, large hemispherical bowls with an incised groove decoration below the rim,¹⁵ or spinning bowls, and the kind of strange vases with pointed bases, which look very similar to a class of Late Middle Kingdom objects tentatively explained by J. Bourriau and St. Quirke as spindles¹⁶ (Fig. 3/10).

As always within Egyptian contexts of the MK, beside Nile clay fabrics, so called Marl clay fabrics are also present. As was to be expected, it is mostly Marl C, the common Marl clay fabric of the MK in northern and middle Egypt. The production of this fabric in Ezbet

10. cf. Czerny 1998: 42, Fig. 11; 44, Fig. 15.

11. Czerny 1998: 44, Fig. 17.

12. Czerny 1998: 44, Fig. 16.

13. The minimum size, however, is slightly larger than that of the “normal” hemispherical cups. Diameters start with ca. 15 cm.

14. Czerny 1998: 43, Fig. 14.

15. Czerny 1998: Fig. 12.

16. in Lahun Studies, Reigate 1998: 66. Quirke, Stephen, ed. Fig. 2; 70.

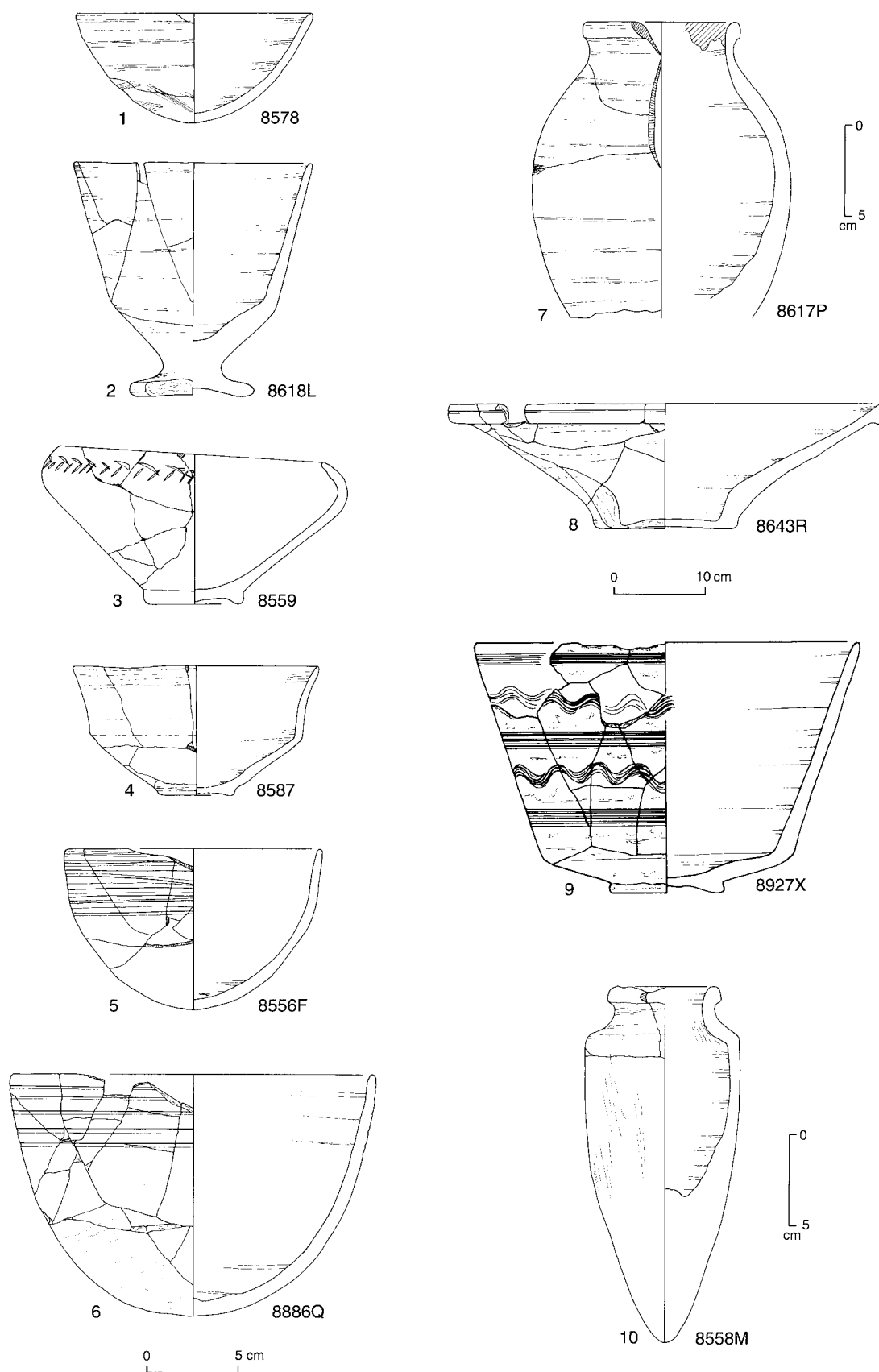


FIGURE 3. Selected pottery types from MK-strata at Ezbet Rushdi.

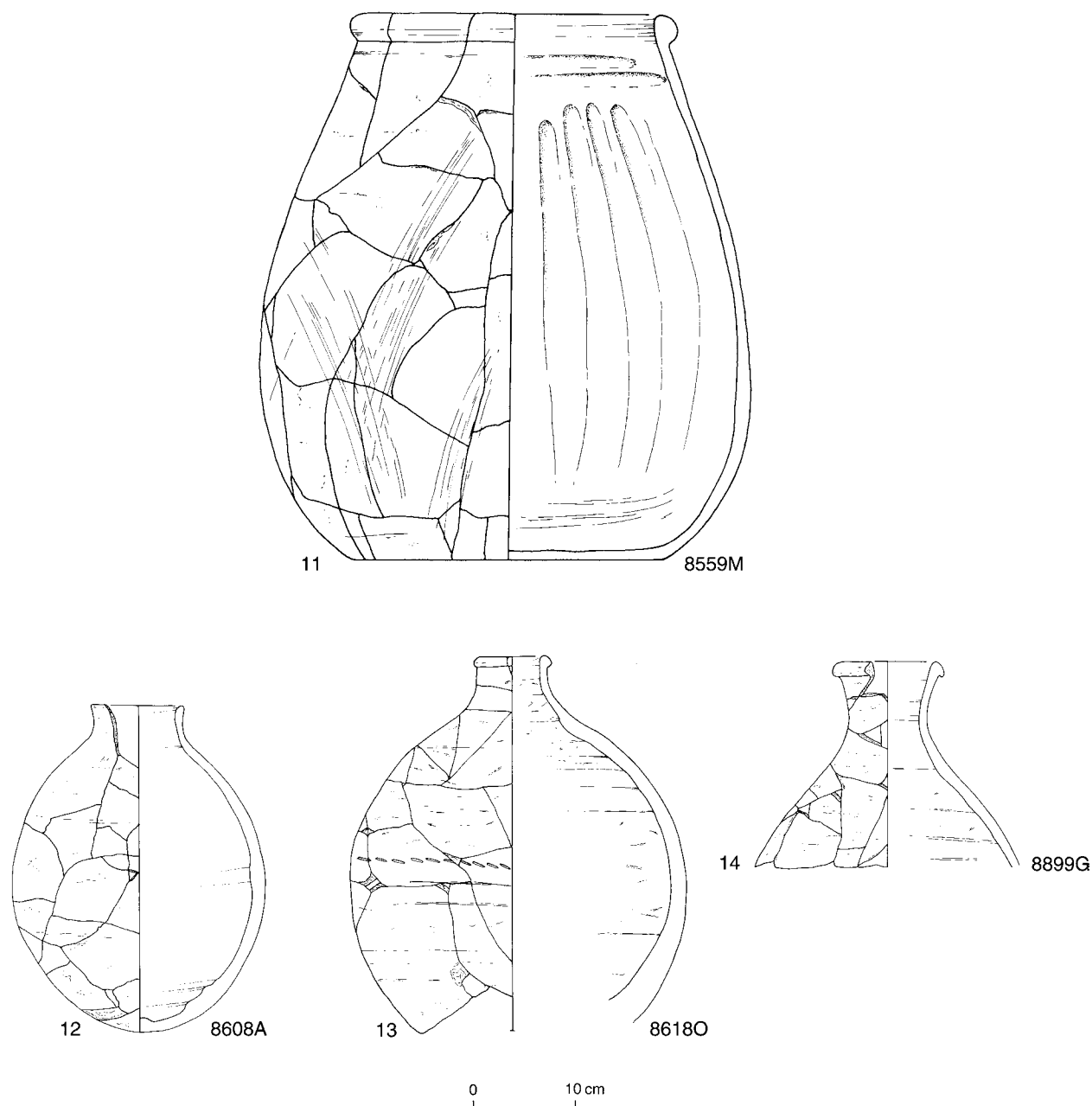


FIGURE 4. Selected pottery types from MK-strata at Ezbet Rushdi.

Rushdi seems to have been even more standardised than that of the Nile clay vessels. This fabric was almost exclusively used for the production of large water containers, which are usually called “zir”.¹⁷ These are always handmade with a wheelmade rim of a very standardised shape. The surface of the interior is usually compacted in order to make it waterproof it (Fig. 4/11). Only very rarely, some small container vessels were found. Just as rare are large Vases with stepped rims.

Upper Egyptian Marl clay, so called Marl A, is also present. Some sherds with an incised criss-cross decoration correspond to a well known upper Egyptian type. Beside these, several

17. cf. Czerny 1998: 45, Fig. 19.

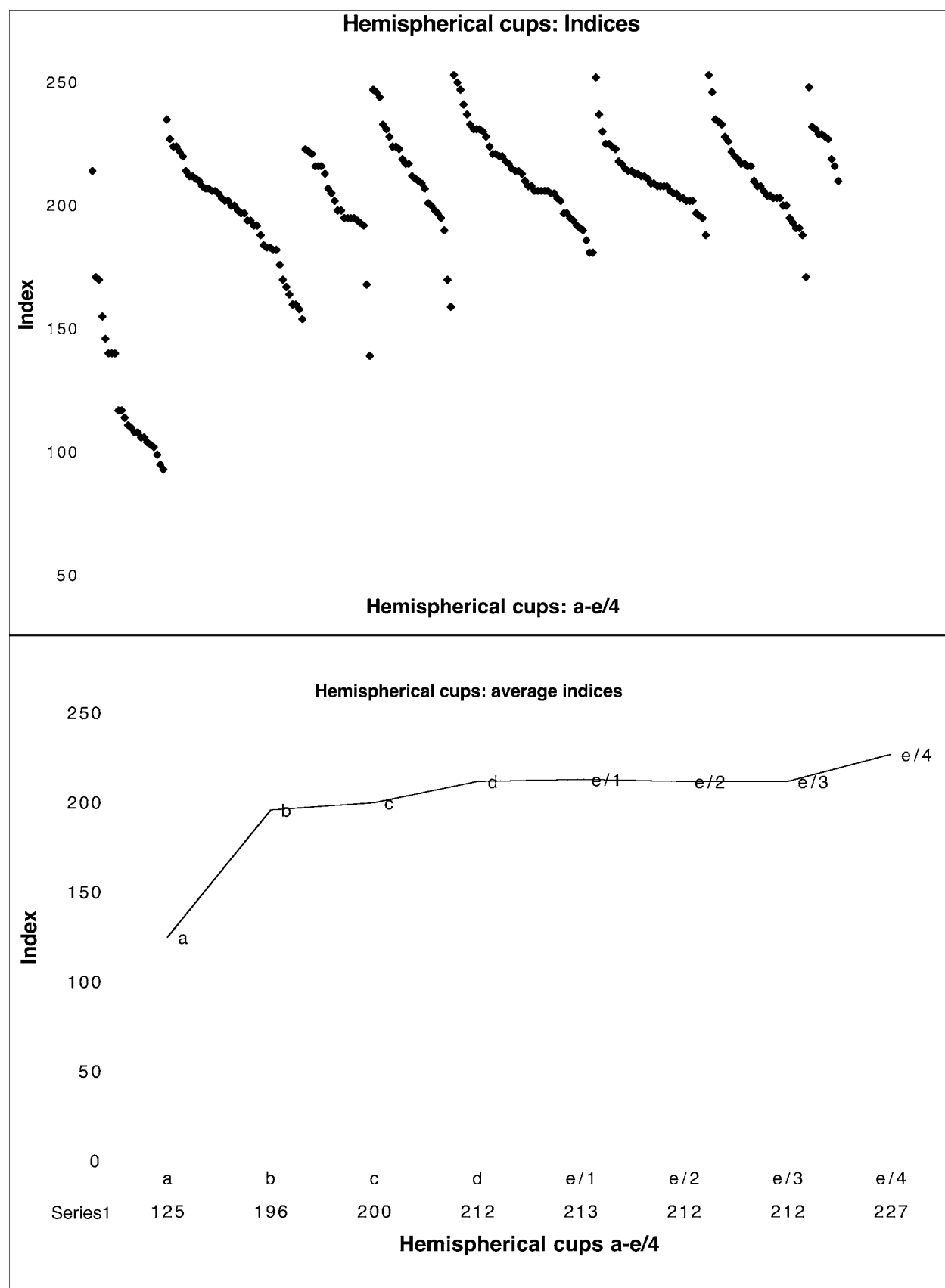


FIGURE 5.a–b. MK hemisphaerical cups from Ezbet Rushdi. a: indices; b: average indices.

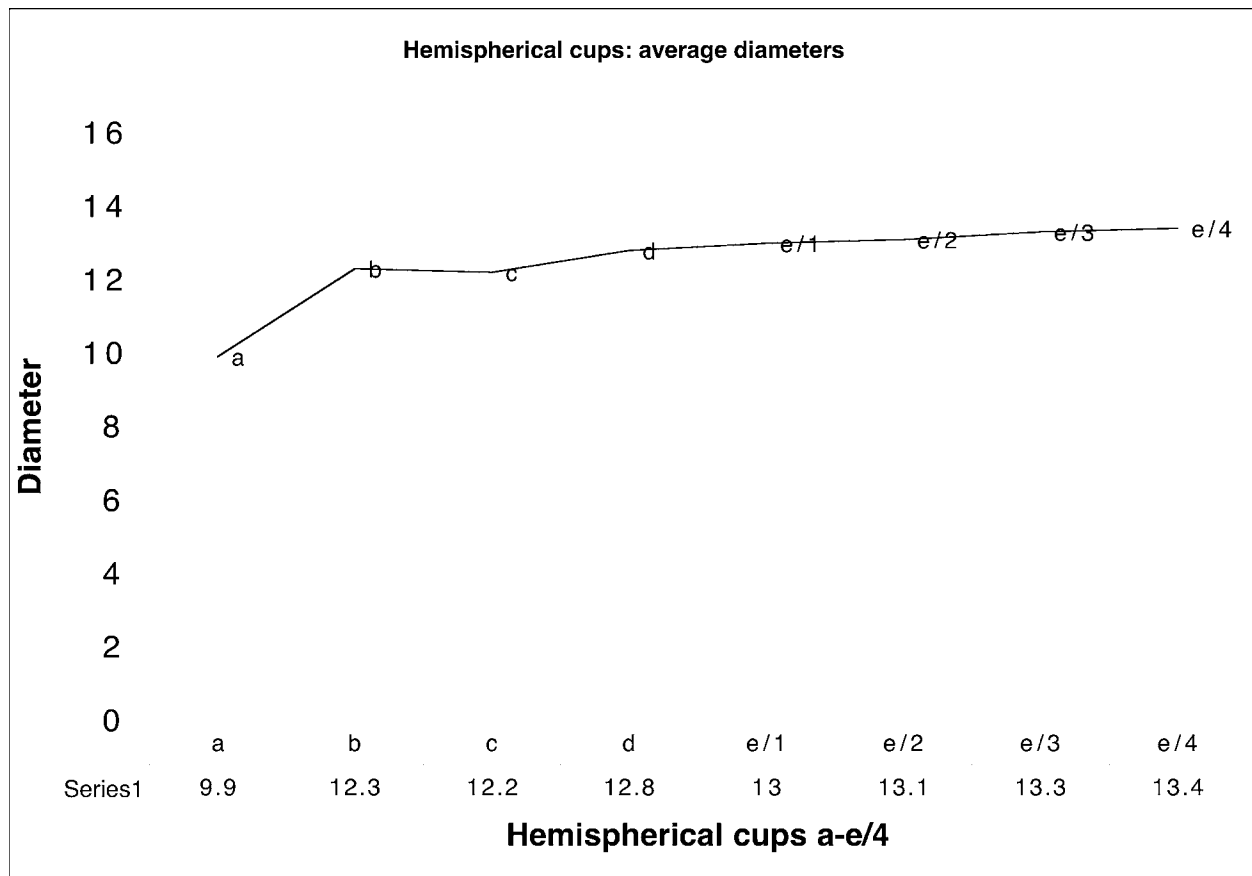


FIGURE 5.c. MK hemisphaerical cups from Ezbet Rushdi: average diameters.

examples of beautifully burnished sherds, including some rims, have been found as well as a complete vessel of the same fabric.¹⁸ For this kind of vases, too, a few parallels from Upper Egypt seem to exist.

Together with this Egyptian pottery, a few sherds of imported foreign vessels have been discovered. Within the stratified layers of the settlement, fragments of Minoan amphorae¹⁹ were found, belonging to at least two different vessels, but coming from the same building complex. Also, in slightly larger quantities, some fragments of Canaanite MB IIA pottery, so called “Levantine painted ware” were present.²⁰ It is obvious, that this material could be very useful for synchronisation purposes, but only if the contexts are clearly defined and accurately dated.

Within the range of Egyptian types, it is first and foremost the cups and beer bottles, which are considered to be of the highest chronological value. Since M. Bietak and Do. Arnold established a system of cup chronology,²¹ using a width/high Index, cups are considered to be the instrument of choice for precise dating, which is correct for the late MK. Unfortunately, this does not seem to apply to the same degree to the early and middle MK.²² What

18. Czerny 1998: 45, Fig. 18.

19. Czerny 1998: Fig. 21.

20. see Bagh, Tine 1998: 47ff. Bagh gave a first account on some of these non-Egyptian wares at the last congress in Rome, as well as at this workshop.

21. Dorothea 1982: 60f.; Bietak 1984: 479ff.

do we see, when we look at the table of average indices per level at Ezbet Rushdi (Fig. 5b)? Str. a refers to later pits, which cut into the excavation area from the recent surface and which belong to different periods from the 13th to the 15th dynasty. They are not connected to any architectural features. Suffice to say, that the cups of str. a are distinguished by significantly lower index values. Str. b is associated with the period, during which the temple was in use. In its latest phase it seems to join or even overlap with str. d/2 from the excavation area F in Tell el-Dab'a, which is late 12th dynasty. The cups from this stratum show an average index value of 170,²³ whereas that of str. b is 195. This clearly indicates, that str. b consists mostly of material older than that from Tell el-Dab'a. Below the temple, the average index values of cups from all strata uniformly lay at a few points above 200. A very slight, but constant increase of the values, however, can be seen.

Naturally, the same is true for the rim diameters (Fig. 5c). As expected, the older the cups, the larger they are. The graph shows a constant, although very slight increase. Considering the broad distribution of data making up the averages (str. b: Index 154–235; str. e/1: Index 181–253; cf. Fig. 5a), as well as the relative uniformity of the rim diameters (almost all fall between 12 and 14 cm), it became clear, that little can be learned from looking at individual items. Remarkably, however, a trend can clearly be seen by looking at large amounts of data.

A separate problem is, that the values tend to be slightly too high when compared with those from Lisht. Using those, the whole settlement would appear to fall into the reign of king Senwosret I. This leads to the conclusion, that certain *trends* of development apply to the whole country, but that the *absolute values* are affected by local particularities.

Regarding the beer bottles, a similar observation can be made: at Ezbet Rushdi, because of the sheer volume of the data, there is no doubt, that in the strata below the temple the common Nile C fabric beer bottle is one with a simple rim (Fig. 4/12). These vessels correspond to type family 40 in R. Engelbach's publications *Riqqa* and *Haragah*.²⁴ It is only in str. b, after the construction of the temple, that this type of rim is replaced by a funnel-shaped rim with a trimmed lip, corresponding to type family 41 in *Riqqa* and *Haragah*²⁵ (Fig. 4/14). The same type of rim is found in Tell el-Dab'a in late 12th dynasty contexts²⁶ or in Lisht, where close parallels to the example shown here have been dated as belonging to the time of the later 12th Dynasty.²⁷

At Ezbet Rushdi, a type has been found which seems to develop from the simple rims into the funnel-shaped rims mentioned above. It shows a narrow, almost cylindrical neck and a distinct, thickened rim (Fig. 4/13). This type of rim is concentrated in stratum c, meaning the time of the construction of the temple and its first use. The problem is, that in Lisht, where this type of rim is the most common one, it is mostly, although not exclusively, associated with the later years of Senwosret I.²⁸ It therefore appears that Tell el-Dab'a and Lisht were completely in sync during the later MK, but that different types of bottles were preferred during the first half of the 12th dynasty. The type used at the capital comes into

22. cf. Seidlmayer n.d. Exkurs: Zur Entwicklung der kalottenförmigen Nöpfe in der 1. Zzt und im frühen MR.

23. 150 in Bietaks original study (AJA 88: 481); more recent research by R. Schiestl, however, produced slightly modified values.

24. Engelbach 1923: Pl. XXXVI.

25. Engelbach 1923: Pl. XXXVIf.

26. Szafranski 1997: 95–119.

27. Dorothea 1988: 131, Figs. 69, 70.

widespread use at Ezbet Rushdi only at a time when it started to decline in Lisht. It is of course possible that this adaptation was caused by closer contact with the sphere of royal administration during the construction of the temple.

As a matter of fact, because of these local particularities, it is difficult to establish with certainty the beginning of the settlement. What remains to be done is to collect further evidence in order to get a more complete picture. Suitable types for this, among others, seem to be the chalices. Parallels from Lisht, dated to the later years of Senwosret I,²⁹ show a great similarity in their general appearance, but different body proportions, which could be the effect of either a development process or simply of regional particularity.

28. Dorothea 1988: 130, Figs. 67, 68; 131, Fig. 69. The necks of the complete examples Fig. 67, however, are turning slightly inwards and the bottles show more slender body proportions than the Ezbet Rushdi example. Because of the almost complete loss of the bodies of the bottles, body proportions can unfortunately not be used for comparison.
29. Dorothea 1992: 55ff. and Pl. 69.

In summary, it is fairly certain that the foundation of the settlement could not have happened before the second half of the reign of Senwosret I. From that point on, however, it must be considered a possibility, but as long as we know so little about provincial Egyptian pottery style in the 12th dynasty, its precise dating will probably remain an open question.

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Stratum b/3 of Tell el-Dabʿa: The MB-Corpus of the Settlement Layers

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Abstract

Stratum b/3(=F) of Tell el-Dabʿa is known as the transition period from the MBIIA to the MBIIB. It dates into the 13th dynasty. About 25–30% of the pottery are MB-shapes. 80% of these vessels are imported from the Syro-Palestinian Area to Tell el-Dabʿa while the rest of these MB-shapes have been copied at the site. The corpus shows a full range of MBIIA and a few MBIIB-shapes coming from well stratified settlement materials. A lot of these vessels do have good parallels coming from Palestinian excavations dating into the end of the MBIIA and the early MBIIB-period. The importance of the Tell el-Dabʿa material lays in the combination of this MB-corpus with Egyptian 13th dynasty pottery material and therefor the link to the Egyptian chronology.

In Tell el-Dabʿa the pottery of the stratum b/3=F was found at three places: Area A/II, F/I and A/IV. It was M. Bietak who suggested that str. b/3 is the transitional period between MBIIA and early MBIIB.¹ The advantage of Tell el-Dabʿa is not only that Egyptian and MB-II pottery have been found side by side, but also that the potters of Avaris copied the imported pottery in a local clay. Therefor one can find in one phase from one vessel type the import as well as the local copy of it. The average percentage of all MB-shapes in the Tell el-Dabʿa pottery material is about 25–30%. 80% of these MB-shapes are imported, while only 20% were products of the local potters.

At the beginning the potters used two groups of Nile clay for their copies:

I-d (VS: Nile D) and I-e (VS: Nile E).² I-d is the ordinary fine Nile clay with a lot of fine limestone added. It seems as if the idea was not only to imitate the shape and surface of the MB originals, but also the fabric itself. Sometimes it is only possible with the help of Neutron Activation Analysis (NAA) and petrographic analysis to determine the origin of a vessel.³ I-d is a new fabric developed most probably for the purpose of imitating MB-shapes in the 13th dynasty.

Typical for str. b/3 are also imitations made of the very sandy I-e clay. This clay was used already in earlier strata—mainly for the production of cooking vessels. Now—maybe because

1. Bietak 1991a: 40.
2. See for the Tell el-Dabʿa ware system: Bietak 1991b: 324–330. The clays equivalent to Nile D and Nile E in the Vienna System: Nordström and Bourriau 1993: 174f.
3. Such phenomena are known from Palestine—i.e., EB-Megiddo or LB-Beth Shan. At both sites copies of Egyptian vessels have been found.

of its parallel structure to some sandy Southern Palestine fabrics—it was also used for the production of imitations.

Although most of the monochrome burnished juglets are coming from tomb contexts, occasionally fragments of such juglets appear in the settlement material of Tell el-Dabʿa. While about 70% of them are imports, the rest is made of Nile clay—mainly I-d. The amount of the imported red burnished juglets is twice the amount of the brown burnished ones. Black burnished examples are rare. Most of the juglets do have a double handle. Strap and round handles are still very infrequent. Ring and button bases are the most common ones. Only from time to time a juglet has a flat base.

In str. b/3 is the last appearance of juglets with a gutter rim (Fig. 1/1). Their shape can be either piriform or rounded biconical. Characteristic is the way the double handle leads from the rim to the upper part of the shoulder. Imported to Avaris, they are either red or brown burnished.⁴

Piriform juglets with a candlestick rim, a double handle, and a ring-, button or flat base (Fig. 1/2) do make their first appearance at the end of str.c=G/the beginning of str.b/3=F. The handle starts at the neck, right under the rim and ends at the shoulder above the maximum diameter. Again these vessels are red or brown burnished. The Egyptian imitation is red burnished and has a strap handle (Fig. 1/3).

Brown burnished jugs with a cut off spout do appear already in str. c=G, but are most common in str.b/3=F. All examples are brown burnished and imported. The ovoid or piriform jugs do have a button base (Fig. 1/4), while the biconical ones have a broad ring base (Fig. 1/5). In most of the cases the jugs have two or three grooves around the base of the neck.⁵

In this stratum both imported and local produced dipper juglets were found (Fig. 1/6). All of them are red burnished, often with a metallic gloss. Their size is between 15–18 cm and their bodies vary between more ovoid at the end of str. c=G and more piriform at the end of str. b/3=F. A round handle starts just below the rim and comes down to the maximum diameter. The lower part of their bodies is trimmed with a tool and cut off at the base.⁶

A typical MB-feature are bowls with an incurved rim (Fig. 1/7). In Tell el-Dabʿa they are known already from earlier periods. Imports were always rare. Nevertheless, in this period this type is the most common bowl type at the site. Most of the bowls with an incurved rim—whether it is rolled and/or trimmed—were produced of local Nile clays (I-b-2 =VS: Nile B2, I-e-2). Their surface treatment can be unburnished, red washed, red washed only at the inside and at the rim, burnished at the inside and at the rim, red burnished at the inside and at the rim or red burnished all over the vessel. They have either a disk- or a ring base. Bowls with an incurved rim and a red burnished cross at the inside appear for the first time in str. b/3=F (Fig. 1/8). Their general feature is like that of the previous type, but they have a red burnished cross at the inside as well as a red burnished rim. In many cases also the plain zones between the red cross were burnished. They are produced from Nile clays (I-b-2, I-d, I-e-2).⁷

Beside the imported carinated bowls in the MBIIA tradition with their sharp carination and their disk base, also more globular bowls occur in this stratum (Fig. 1/9). Most of them are red burnished. These are the types the potters of Avaris started to imitate. The more rounded red burnished MBIIB types do have either a disk- or a ring base (Fig. 1/10,11).

4. See for this type: Beck 1975: 65, Fig. 9/2. Also Marcus 1991: 150, Fig. 43/1.

5. A comparable piece comes from T 984 at Kabri. See Kempinski and Niemeier 1990: Fig. 19/10.

6. See for an exact parallel on the southern Lebanese coast in Tufnell 1975–76: 22, Fig 2/26.

7. This type appears in Tell Beit Mirsim in str. F. Albright 1933: Pl. 5/5.

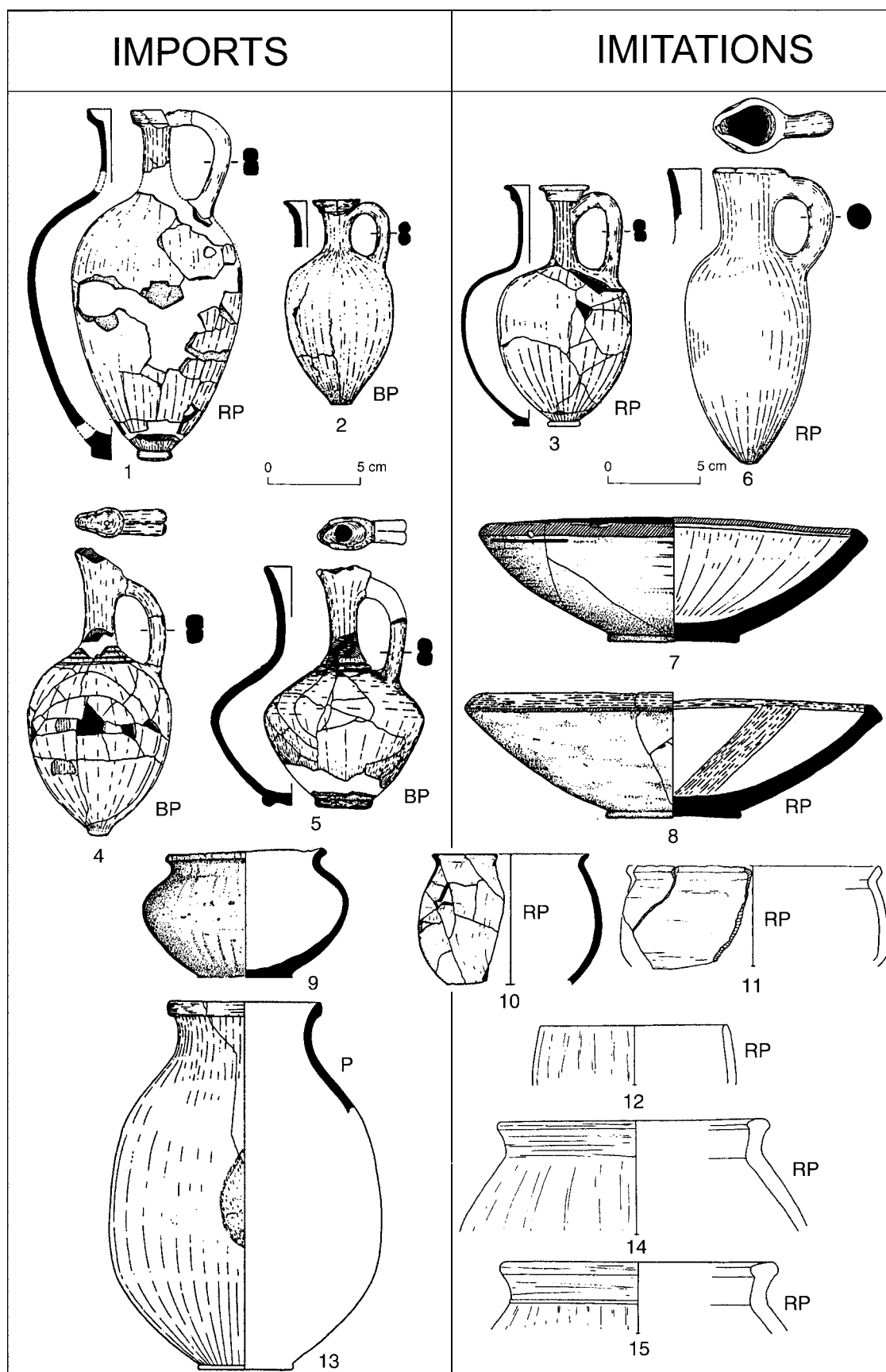


FIGURE 1. Selected Pottery from Str. B/3 – F from Tell el-Dab'a.

In the sherd collections of str. b/3=F small fragments of imported brown or red burnished, as well as locally produced red burnished globular bowls of different sizes were found (Fig. 1/12). They have a vertical burnishing and most likely a disk base.

Plain or red burnished globular jars are also coming out of a MBIIA tradition. Their rims are rolled to the outside and either horizontally or slightly vertically trimmed with a tool—producing in some cases a thickening inside (Fig. 1/14,15). One imported example was found at the end of str. c=G. It has a disk base, while the examples of str. b/3=F are made of Nile clays (I-d, I-e-2) and have a raised flat base—probably imitating a disk base in this way. Rims from white washed craters made of I-e-2 clay were found in the pottery collections from this stratum onwards. Only in one case it was possible to reconstruct the whole vessel (Fig. 2/1). This very fragmentary example has an elongated and folded rim. The rim got an inner gutter by trimming it horizontally with a tool. It has a ring base.⁸ Quite common are rims of large red burnished pots or craters with a rim diameter between 16–25 cm (Figs. 2/2, 3, 4). They have various rim types, which can be rolled to the outside or elongated and folded to the outside or turned out and trimmed with a tool. Typical is a red burnishing, which can be done vertically and horizontally. All vessels are made of I-e-2 fabric. Most probably the potters were inspired by craters from Palestine.

At the end of str. c=G/the beginning of str. b/3=F, a few examples of imported wheelmade cooking pots have been found. One piece has a rim which is rolled to the outside and trimmed vertically, producing a groove (Fig. 2/5). The shape of the body is typical for this kind of cooking pot.⁹ While this one is decorated with horizontal grooves, the second example (Fig. 2/6) has got its decoration incised with a comb. A weavy decoration is visible between two parallel incised lines. Its rim is everted with a gutter inside. In Tell el-Dab'a imitations of this Middle Bronze Age wheelmade cooking pot can be found from this stratum onwards (Fig. 2/7, 8). In most of the cases the rims are folded to the outside, while the surface is always without any treatment.

A big open pot or crater with horizontal handles appears for the first time in this stratum (Fig. 2/9). Only fragments of this type have been found yet. This vessel is white washed at the outside and burnished at the inside. The rim is rolled to the outside.¹⁰

There was also a change in the fabrics of the imported canaanite storage jars. Only 10–15% of these jars were produced from the dark red terra rossa clay (IV-1)¹¹ with its enormous amount of crushed limestone particles (Fig. 3/1–9). This fabric was typical for canaanite jars of the preceding levels. The rims are either elongated and folded—typical for the MBIIA—or slightly turned out, or sometimes everted.

The bulk of these canaanite jars found at Tell el-Dab'a—about 3/4 of the total—belongs to a ware group named IV-2 in the Tell el-Dab'a classification system. It contains many different fabrics which originate—according to some previous results—from the South of Palestine.¹² The rims are varying from elongated and folded rims, which can be trimmed with

8. Possible models for this shape can be found at Megiddo—Loud 1948: 325, Pl.42/7. Or at YavneYam—Gophna and Beck 1981: 67, Fig. 10/6.

9. According to some petrographical analysis by Y. Goren this vessel comes most probably from Eastern Galilee or the Yarmuk area or the Akkar or the Middle Orontes north of Qadesh.

10. At Tell Jerishe a similar piece was found in Stratum V (but its handles are vertical). Geva 1982: 20, Fig. 23/15.

11. See Bietak 1991b: 329.

12. On the imports of Tell el-Dab'a, NAA have been done by P. McGovern and petrographical analysis by Y. Goren.

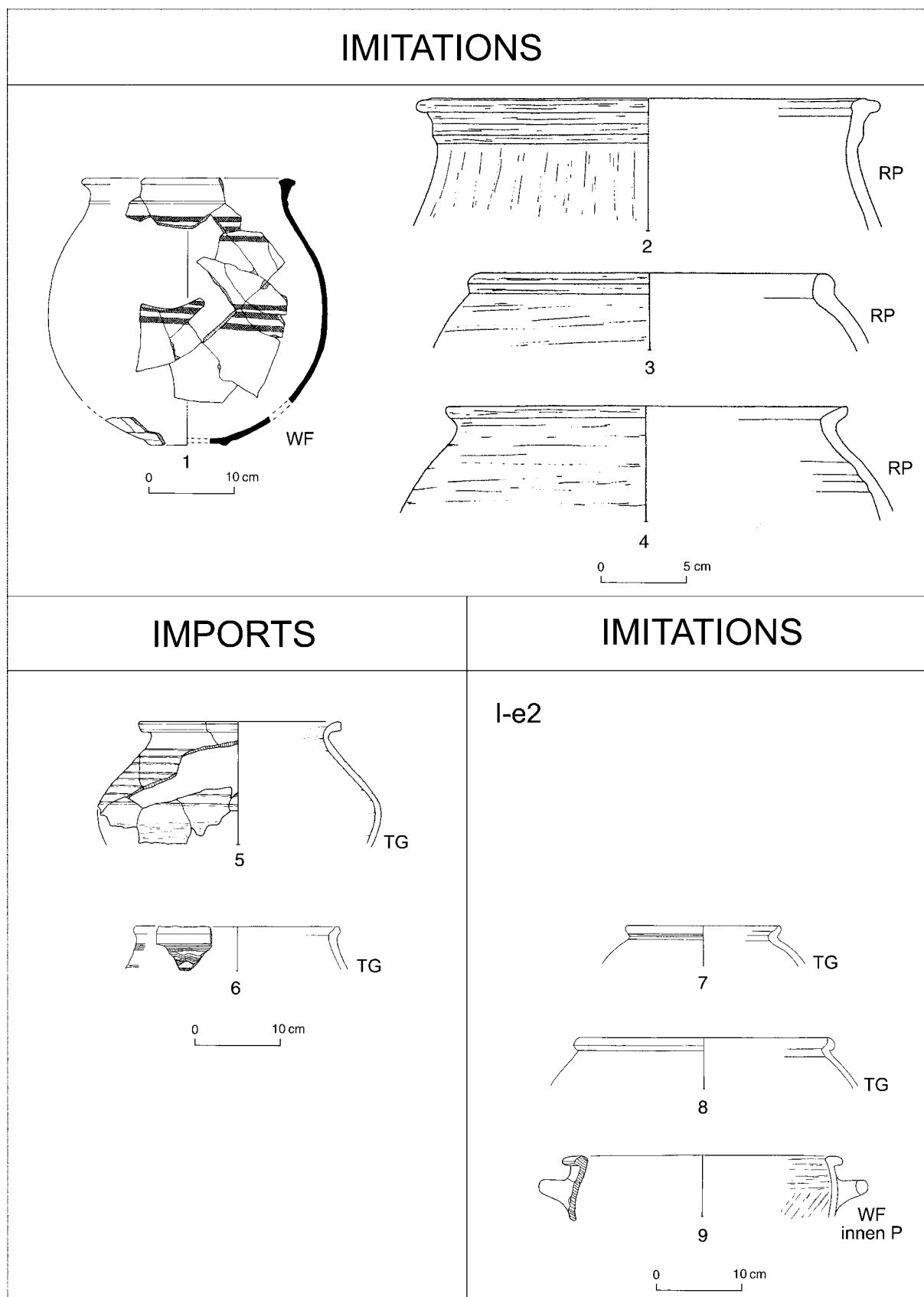


FIGURE 2. Selected Pottery from Str. B/3 – F from Tell el-Dabʿa.

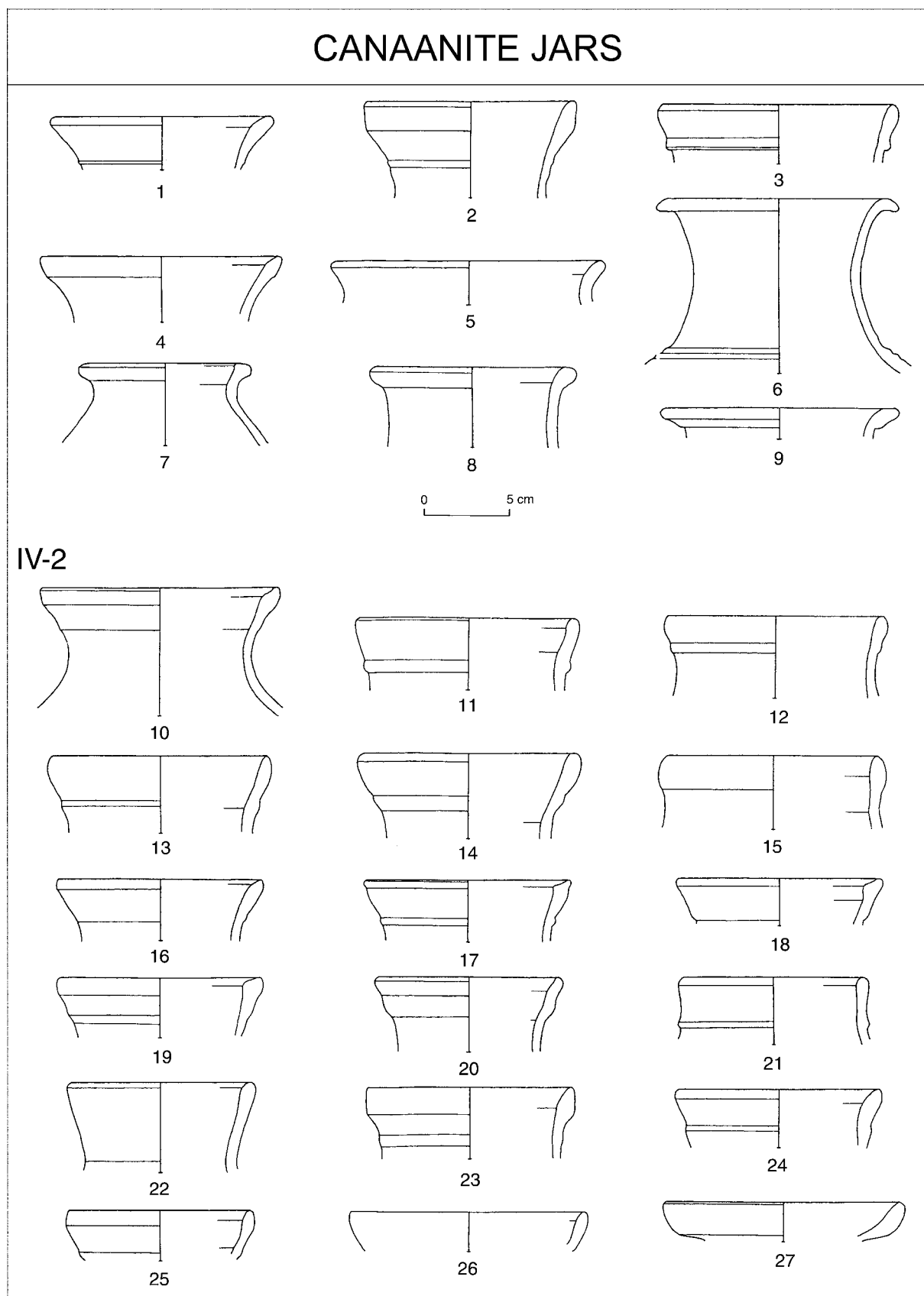


FIGURE 3. Canaanite Jars from b/3 – F from Tell el-Dab'a.

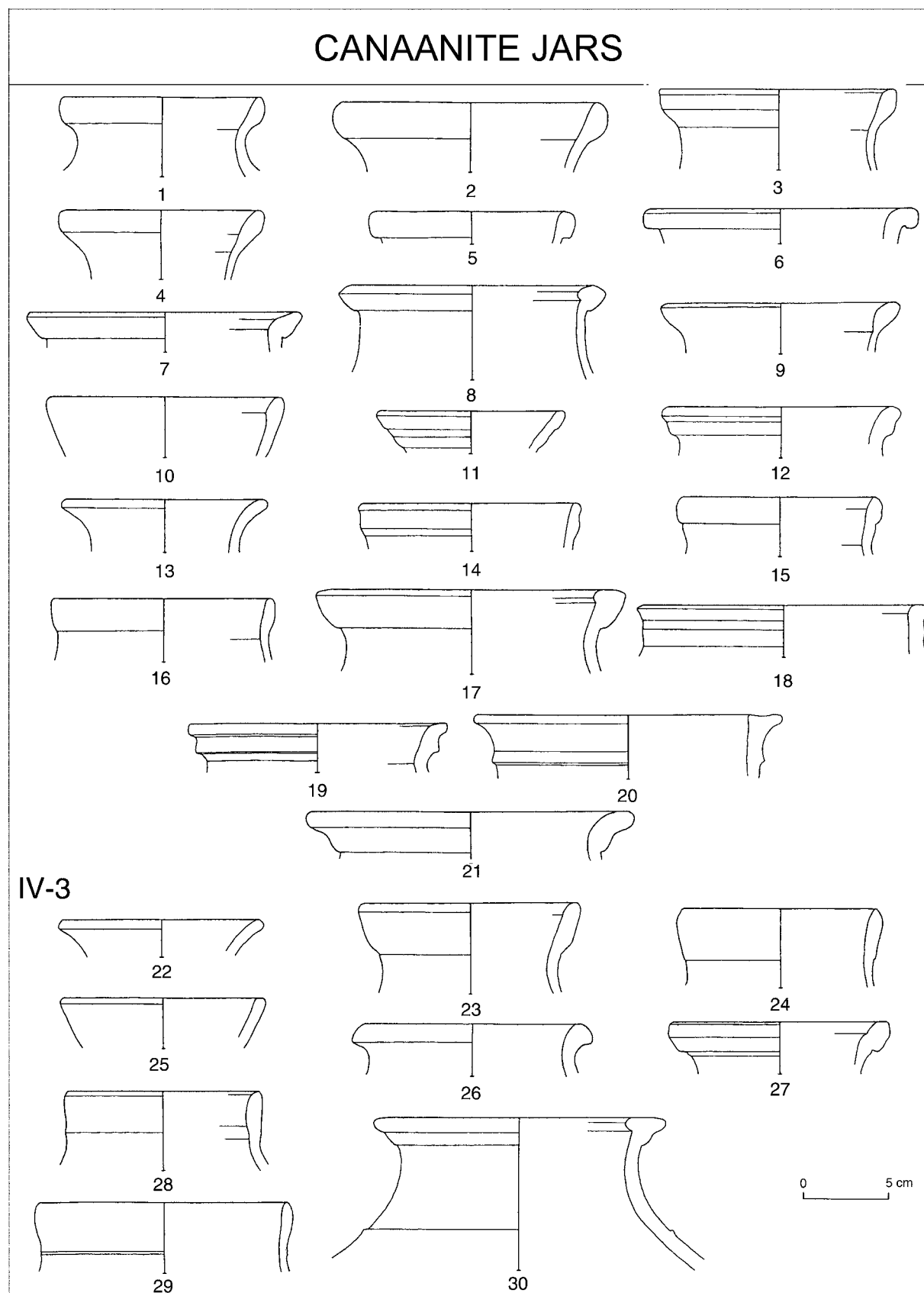


FIGURE 4. Canaanite Jars from b/3 – F from Tell el-Dabʿa.

a tool, to straight ones. They can be thickened or everted, rolled or stepped (Fig. 3/10–27 and Fig. 4/1–16).

The 3rd fabric group is defined by M. Bietak as the limestone hill clays (IV-3).¹³ Characteristic for this group is a cretaceous clay with a colour ranging from white to beige to brown. The origin of these clays differs. Most probably they are coming from Syria and Inner Palestine. They represent only 5–8% of the canaanite jar corpus. Their rims are either elongated folded, straight or slightly everted, thickened or rolled and trimmed (Fig. 4/22–29). Another group of rims seems to come from huge vessels (Fig. 4/17–21, 30)—most probably also canaanite jars—of various fabrics. Their diameters reach from 16 to 19 cm.

In the settlement material of Tell el-Dab'a str. b/3 one senses for the first time the beginning of a local tradition in the production of MB pottery types. This consequently leads to the classical repertoire of the Hyksos period at the site. The mainly burnished MB-material gives the impression that the closest parallels in shapes, surface treatment and maybe fabrics seem to be strongly influenced by the pottery from the coast line of the southern Levant. The closest parallels are known from sites like Tel Aphek, Tel Nami, Tel Kabri and Tel Dan.

13. Bietak 1991b: 329.

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From Canaanite Settlement to Egyptian Stronghold: The LB I–IIA Ceramic Corpus from Tel Beth Shean*

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Abstract

Beth Shean (Tell el-Husn) is well known as a stronghold of Egyptian power in the southern Levant during the New Kingdom period. Three phases of Late Bronze Age occupation corresponding to the time of the Eighteenth Dynasty document the transition of Beth Shean from a Canaanite settlement to an Egyptian outpost. This change in status presumably occurred after the campaigns of Thutmose III in the mid-fifteenth century and continued for about three hundred years into the second half of the twelfth century B.C.E.

The pottery corpus germane to this discussion comes from the University of Pennsylvania excavations of Level IX (1927–28) and renewed work at the site by Prof. Amihai Mazar of the Hebrew University (1989–96). The ceramic assemblage of both expeditions will provide a basis for discussing the transition between the end of the Middle Bronze Age and the appearance of an Egyptian-inspired component in the corpus. As a key Egyptian center during the Amarna period, Beth Shean can potentially serve as an important case study for Canaanite and Egyptian interaction.

Beth Shean (Tell el-Husn) is a well-known site strategically located at the juncture of the Jezreel and Jordan valleys. Its controlling position at a major crossroad contributed significantly to the Egyptian choice of Beth Shean as a key inland stronghold in the southern Levant for some three hundred years. The aim of this paper is to briefly document the transition of Beth Shean from a Canaanite village to an Egyptian administrative center through an examination of the pottery.

In work that took place on the tel from 1921–33, archaeologists from the University of Pennsylvania revealed an entire stratigraphic sequence spanning the Late Neolithic

*. I would like to thank Prof. Amihai Mazar of the Hebrew University for allowing me to work on the Late Bronze Age material from Beth Shean. I would also like to thank the University of Pennsylvania Museum of Archaeology and Anthropology, and in particular Dr. Bruce Routledge, who permitted me to examine the unpublished pottery from Alan Rowe's 1927–28 excavations and provisional plates of the Level IX pottery prepared by Frances James. I would finally like to thank the W. F. Albright Institute of Archaeological Research in Jerusalem under whose sponsorship I carried out this research while the James A. Montgomery fellow in 1999–2000.

through Crusader periods.¹ Fifty-six year later, Prof. Amihai Mazar of the Hebrew University directed new excavations at the site, making use of stepped terraces left in the mound by the earlier excavators. A significant portion of Level IX still survived on the middle terrace, permitting us to recheck the earlier results and provide solutions to previously unanswered questions and problems.²

Summary of the stratigraphy and architecture

Three main Strata are relevant to this discussion. Stratum R3, equivalent to Level XA of the previous excavations, is the final Middle Bronze Age settlement.³ The pottery assemblage is classic MB IIC/III, including chocolate-on-white ware and an absence of Cypriot imports. Carbon-14 tests on a piece of charred olive wood from a destroyed building produced a *terminus post quem* date of 1529 B.C.E. for the end of Stratum R3.⁴

On the ruins of this town was built a modest temple dating to the first half of the fifteenth century (LB IA).⁵ The limited extent of the Stratum R2 remains caused the previous excavators to miss this level, but pottery from this phase was collected by FitzGerald and is equivalent in part to "Below IX".⁶ The pottery is Canaanite with only a handful of Cypriot imports that include Monochrome, White Slip I and Base-Ring I. Following a severe catastrophe—possibly an earthquake—the temple was cleaned of the majority of its finds, filled in, and sealed over. A short post-temple phase (Stratum R2') then ensued.

In Stratum R1, above the buried temple, was built the settlement attributed to Level IX by A. Rowe in 1927–28. This Stratum had a long life and existed in two distinct phases not recognized by the earlier excavators. The time of its construction (phase R1b) dates to the second half of the fifteenth century (LB IB). The presence of Egyptian-style pottery along with the Canaanite assemblage prompted us to conclude that this settlement was established after the Megiddo campaign of Thutmose III. The subsequent rebuild (phase R1a), marked by alterations to the original plan, belongs to the Amarna period garrison of the fourteenth century (LB IIA).⁷

1. Preliminary reports were published in *Museum Journal* and *Palestine Exploration Fund Quarterly Statement*. A. Rowe and G. M. FitzGerald initiated a final publication series that was never fully completed. The Iron Age Strata were later published by F. James, the Northern Cemetery by E. Oren, and Levels VII–VIII by F. James and P. E. McGovern. Strata prior to the thirteenth century B.C.E. still await final publication.
2. For a summary of the results of the Hebrew University project from 1989–96, see A. Mazar (1997).
3. Due to an inability to reconcile our stratigraphy to that of the University of Pennsylvania excavations, we have retained the use of our local stratigraphy. See Table 1.
4. All dates in this article are B.C.E. or Before the Common Era.
5. The R2 sanctuary belongs to the category of non-monumental, non-symmetrical temples in Canaan (see the discussion in Mazar 1992, 1993). General parallels are found in Sanctuary B2 from Tell Mardikh IIIB, the temple at Tel Mevorakh (Stern 1977, 1984) and the Lachish Fosse Temples (Tufnell, et al. 1940).
6. During her study of the Middle and Late Bronze Age pottery, F. James recognized that earlier LB types did appear in the corpus and posited the existence of earlier Phases not seen by the excavators. Some of this pottery was assigned to Below IX and would include vessels from our Strata R2 and R1b.
7. Since Rowe did not discern these two Phases, he inadvertently combined the two Phases together. This explains the odd arrangement of walls that appear on the Level IX plan (McGovern 1985: 12, Map 4). It is also apparent from the Penn plates, as observed earlier by

The Penn excavators do not mention a destruction of Level IX, but it was quite evident that at least a portion of the site was destroyed. An extensive burnt layer sealed by a thick collapse of burnt mudbrick was found in the northeast corner of the area. Charred wheat provided us with a radiocarbon determination, but the calibrated dates of 1495–1390 (95% probability) appear to be somewhat too early. It seems more likely that the end of the phase R1a garrison at Beth Shean coincided with the period of decline that occurred during the post-Amarna period in the last quarter of the fourteenth century.⁸

The pottery

The LB I–IIA ceramic corpus from Strata R2–R1 includes three main cultural components.⁹ The dominant pottery assemblage in all layers is Canaanite. This is accompanied by an Egyptian-style element in Stratum R1 that makes up less than 10% of the total corpus. Only a handful of imported sherds, mainly Cypriot, appear in all Strata and include Monochrome, White Slip I–II and Base-Ring I–II.¹⁰

The Canaanite pottery (Figs. 1: 1–3: 11)

The Canaanite pottery shares most traits with sites in the Central Jordan and Jezreel valleys such as Pella, Tell Abu al-Kharaz and Megiddo. Parallels also exist at Hazor and at sites in the south such as Shiloh, Tel Batash and Lachish.

Continuity with the Middle Bronze Age is represented by a carry over of the same general shapes and classes of vessels. In a few cases, the same pottery-making tradition of thin, wheel-made wares continues alongside new techniques that seem to have abandoned the fast wheel—a change seen at many sites in the southern Levant.¹¹

Bowls: *Rounded and straight-sided* bowls are the most common with antecedents in MB II platter bowls (Figs. 1: 1–4). Although this broad, shallow form continues into LB I, the proportions are generally smaller with a thick and coarse ware fabric that includes organic matter like straw—one indication of a change in the manufacturing technique. Medium intermediate bowls predominate (Figs. 1: 2–4). Large (Fig. 1: 1) or small intermediate bowls are considerably fewer.¹² Bases range from flat (Fig. 1: 2), to disc (Fig. 1: 3), to ring (Fig. 1: 4). The former is rare with Canaanite bowls, while the latter is the most popular and occurs in a variety of heights and styles.

James and McGovern (1993: xxvii), that several loci contained a mixture of pottery spanning the thirteenth through the sixteenth centuries. For this reason, this presentation relies mainly on the stratigraphy and pottery excavated by the Hebrew University.

8. As shown by the publication of James and McGovern, the pottery from Levels VIII–VII is thirteenth century and therefore belongs to the garrison controlled by the Ramesside pharaohs of the Nineteenth Dynasty. It is possible that Level VIII was built by Seti I in a reassertion of Egyptian power following the rebellion of Pella and Hamath—an event recorded in the large stele of Seti I found at Beth Shean by A. Rowe : 26–29).
9. A full reassessment of the stratigraphy and a comprehensive study of the pottery from the University of Pennsylvania and Hebrew University projects form part of a doctoral dissertation by the author. Robert A. Mullins, *Beth Shean during the Reign of the Eighteenth Dynasty*. Ph.D. dissertation. Jerusalem: The Hebrew University of Jerusalem, forthcoming.
10. A single Mycenaean body fragment, probably from a stirrup jar, was found in the Hebrew University excavations. Mycenaean pottery found in Level IX by the earlier excavators was studied by V. Hankey (1966, 1993: 109–110).
11. For a recent discussion see London (1999), especially pp. 69–78.
12. The size proportions for bowls were adapted from : 26–33).

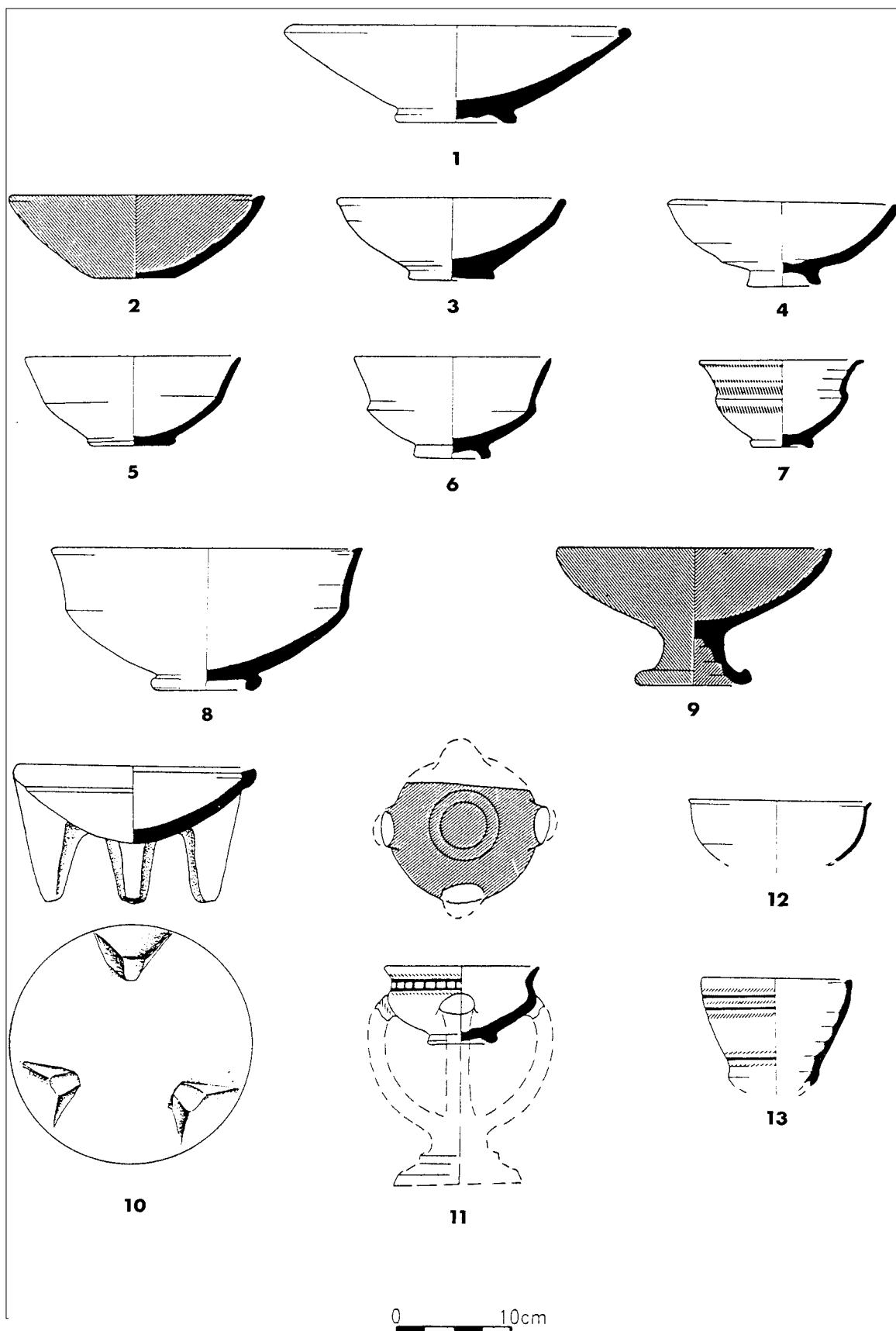


FIGURE 1.

Carinated bowls form the next most common group (Figs. 1: 5–8). They continue the typology of the MB bowls, but the rim stance is less flared and there is a noticeable absence of prominent folded (Z-shape) carination. Most are medium intermediate (Figs. 1: 5–6) with fewer small intermediate (Fig. 1: 7) and large (Fig. 1: 8) bowls. The most common style of carination is angular (Figs. 1: 5, 8). When folded carination appears (Figs. 1: 6–7) it is less pronounced, forming a slight bend or pinch. This trend stands in contrast to Hazor where the MB-tradition of pronounced folded carination continues to a comparatively larger degree (e.g., Amiran 1969: Pl. 39: 1).

Footed bowls are the third category, that includes pedestal bowls and chalices (Fig. 1: 9) together with tripod bowls (Fig. 1: 10). Unique to Beth Shean is a legged bowl-like chalice (Fig. 1: 11) identical to one found by Rowe in a room adjoining the southern side of the Mekal temple.

Miscellaneous bowls form the fourth and final group. This includes a variety of uncommon types such as deep bowls, a scoop found by Rowe nearby the entrance to the Mekal temple, and miniature bowls that presumably served a votive function.

Only a few bowls were decorated, but when they were, it was usually red-only (Fig. 1: 7) or bichrome painted designs. Sometimes the potters used a dark or light red slip that was occasionally wheel-burnished (Figs. 1: 2, 9). Delicate bowls that continue the wheel-made technology of the Middle Bronze Age appear in small quantities as both rounded and carinated bowls (Fig. 1: 12).

Goblets. The basic goblet is a carinated type well known in the country during the Late Bronze Age (Fig. 1: 13).

Kraters. The majority of kraters, interpreted here as serving vessels for group consumption, have *carinated* bodies and everted rounded or triangular rims (Fig. 2: 1). A smaller number of *necked kraters* and *large krater-jars* also appear. When decorated, the bichrome-colored triglyph and metope style is most common. Pictorial scenes occur—especially the date palm—but less commonly than abstract designs.

Biconical vessels. There are two main biconical shapes—those lacking a neck (Figs. 2: 2–4) and those with a neck (Fig. 2: 5). Here, too, the bichrome triglyph and metope style predominates. Kraters are the most common in all Strata (Fig. 2: 2) followed by jugs similar to the chocolate-on-white ware fragment (Fig. 2: 3) found on a surface relating to the Stratum R2 temple.¹³ Amphoriskos-kraters such as those in Amiran (1969: Pls. 47: 5, 49: 10) appear only in the Penn repertoire.

Cooking pots. The basic cooking pot shows typological continuity with the Middle Bronze Age in its *carinated* body (Figs. 2: 6–7). Rims vary from everted rounded (generally earlier in the LB sequence, Fig. 2: 6) to triangular (Fig. 2: 7). A few have gutter rims for a lid. One example of a baking tray came from an LB IIA context.

Storage containers. In most cases, the large amount of sherd material, typical to tells, made it difficult to associate the rims with specific containers. For this reason, we formed a *closed vessel* category and lumped them into a single group (Figs. 3: 1–4). From a manufacturing standpoint, this means that the same neck and rim could be placed on various jar and jug bodies according to the choice of the potter. These vessels had either plain (Fig. 3: 1) or

13. Three MB IIC/III Strata were identified at Beth Shean. The lowest (Stratum R5) lacked chocolate-on white ware, while the last two (Strata R4–3) produced significant amounts. Even though this style continued into LB I at Beth Shean, the quantities are less and it seems to represent the tapering off of an earlier MB pottery tradition.

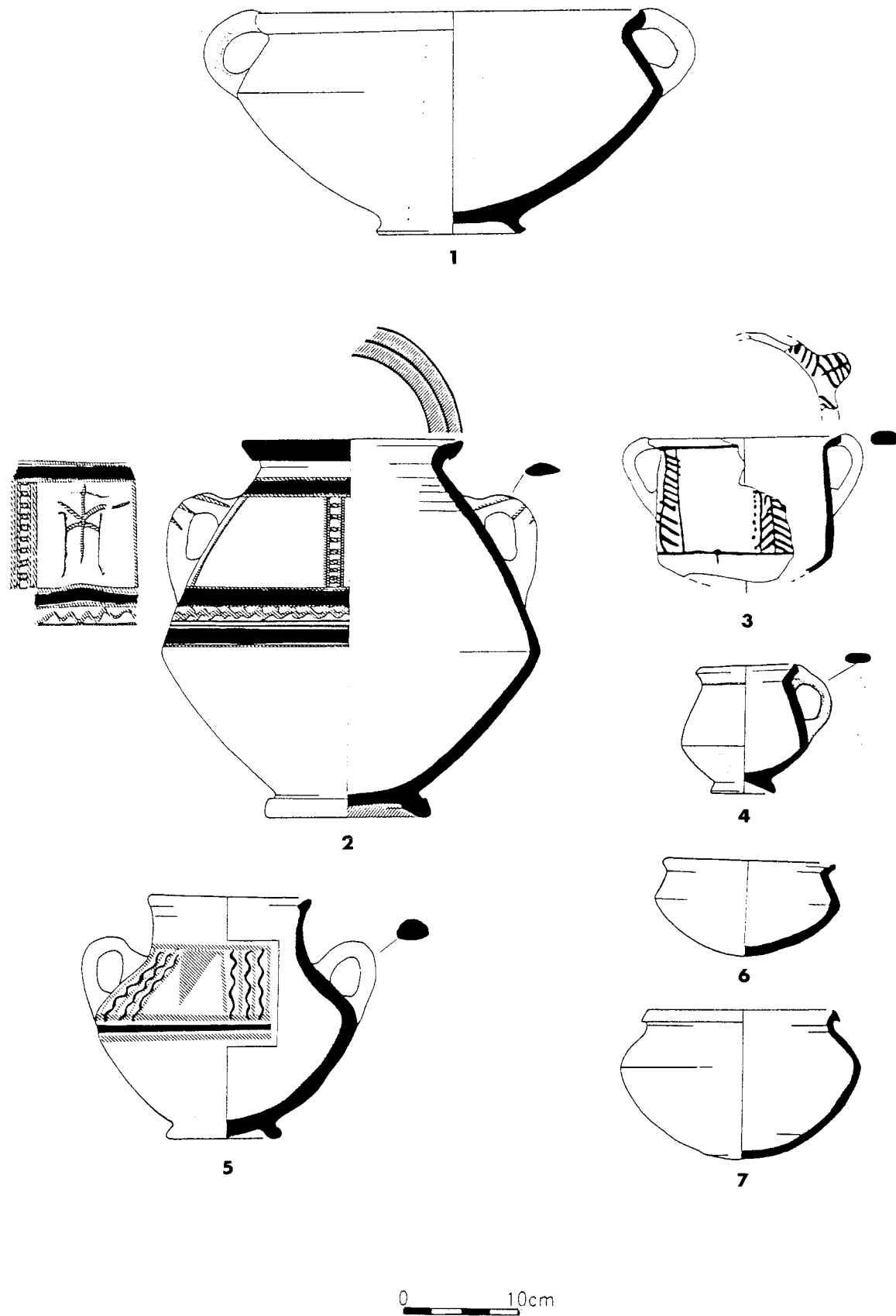


FIGURE 2.

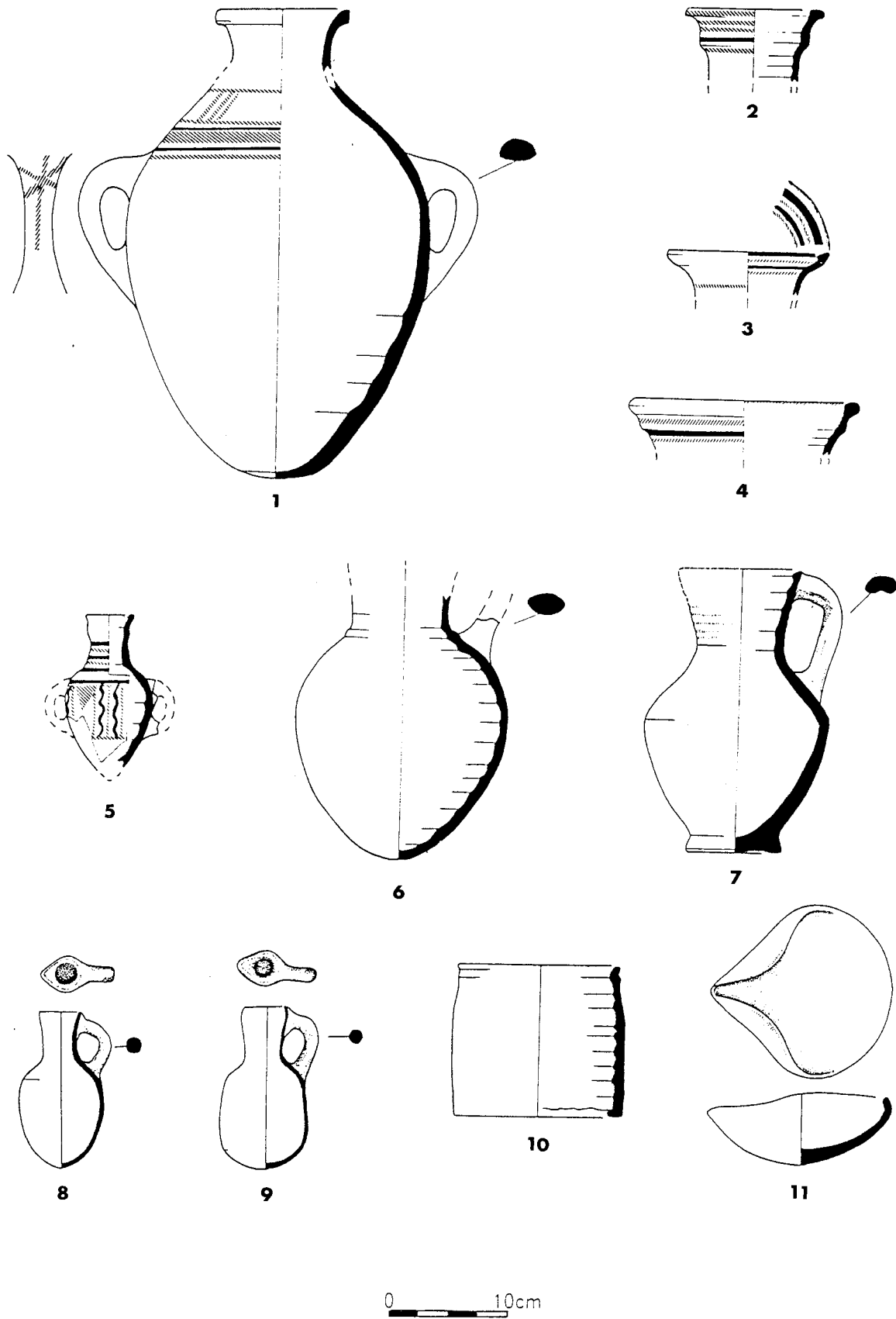


FIGURE 3.

ridged (Figs. 3: 2, 4) necks. A few had gutter rims as well (Fig. 3: 3). The *storage jars* had ovoid bodies with rounded, flattened or convex bases (Fig. 3: 1). Occasionally they were decorated on the shoulder in red-only or bichrome colors. The large store jars or *pithoi* tended to be more elongated with externally thickened rims not as elaborately profiled as those in the MB. One small amphoriskos appeared in the Hebrew University excavations (Fig. 3: 5) while a few more came from the Penn excavations.

Jugs and juglets. The most common *jug* had a single strap handle from rim to upper shoulder with a rounded (Fig. 3: 6) or attached (Fig. 3: 7) base. Jars with shoulder handles disappear entirely from Beth Shean at the end of the MB. The *dipper juglets* are typical to the period with the tall, narrow neck and pinched spout (Figs. 3: 8–9). Cypriot black lustrous or the *gray juglet*, usually regarded as a harbinger of LB I, was not found on the tel, but it does appear in Tomb 42 of the Northern Cemetery.

Miscellaneous vessels. This group includes *cylindrical stands* (Fig. 3: 10) from a side chamber of the Stratum R2 temple and *saucer lamps* (Fig. 3: 11) with pinched spouts generally deeper than their less-pronounced MB predecessors.

*The Egyptian-style pottery*¹⁴

The total number of Egyptian-inspired vessels in Stratum R1 was quite small. Out of a total of 4,746 registered sherds for the LB I–IIA Strata, 4.5% (n= 210) were Egyptian-style. Out of 830 sherds in unpublished plates prepared by F. James for the University Museum excavations, 7.5% (n= 62) were Egyptian-style.¹⁵

The vessels are typical for the New Kingdom with the more fruitful parallels coming from el-Amarna. Out of P. Rose's 39 groups approximately one-fourth appear at Beth Shean. The reason for this may be coincidental in that both sites produced domestic assemblages not typically found in mortuary contexts, which tend to yield the majority of pottery for comparative purposes.

Taken as a whole, the Egyptian-style repertoire includes bowls, jars, and stands. *Bowls* form the largest group and are mass-produced from coarse granular local clays containing moderate amounts of organic temper (Figs. 4: 1–8).¹⁶ They were normally string-cut and then turned to scrape off the excess clay and give final shape to the vessel. The upper exterior and inside were finished by smoothing. Medium intermediate bowls were the most common, having flat string-cut bases and either rounded (Fig. 4: 1–2) or everted (Fig. 4: 3) rims. Some were decorated with red paint on their rims. The apparent careless mode of manufacture often left splotches of paint inside (Fig. 4: 2). Bowls with rounded bases were limited to the fourteenth century phase excavated by Penn and not found by us at all.¹⁷ A unique spin-

14. The term "Egyptian-style" refers to vessels manufactured from local clays in Egyptian form and techniques, while "Egyptian" is usually reserved for imports.

15. The Penn statistics are skewed since we only know about the vessels that appear in the plates. Even so, it would be fair to say that the total number of Egyptian-style vessels never exceeded 10% of the total corpus. By contrast, in Nineteenth and Twentieth dynasty levels excavated by Hebrew University, the Egyptian-style component was about 20–25% of the total (A. Killebrew, personal communication).

16. Petrographic analysis of the Beth Shean assemblage by A. Cohen-Weinberger for the Twentieth and Eighteenth Dynasties indicates that all of the vessels were made from local clays.

17. One of these bowls was examined at the University Museum in Philadelphia. It revealed the same technological traits as the other Egyptian-style bowls. It seems to have been string cut from a hump of clay and then secondarily worked to form the rounded base. For examples of these bowls from Levels VIII–VII, see James and McGovern (1993: Figs. 8: 1, 27: 7, 36: 3, etc.).

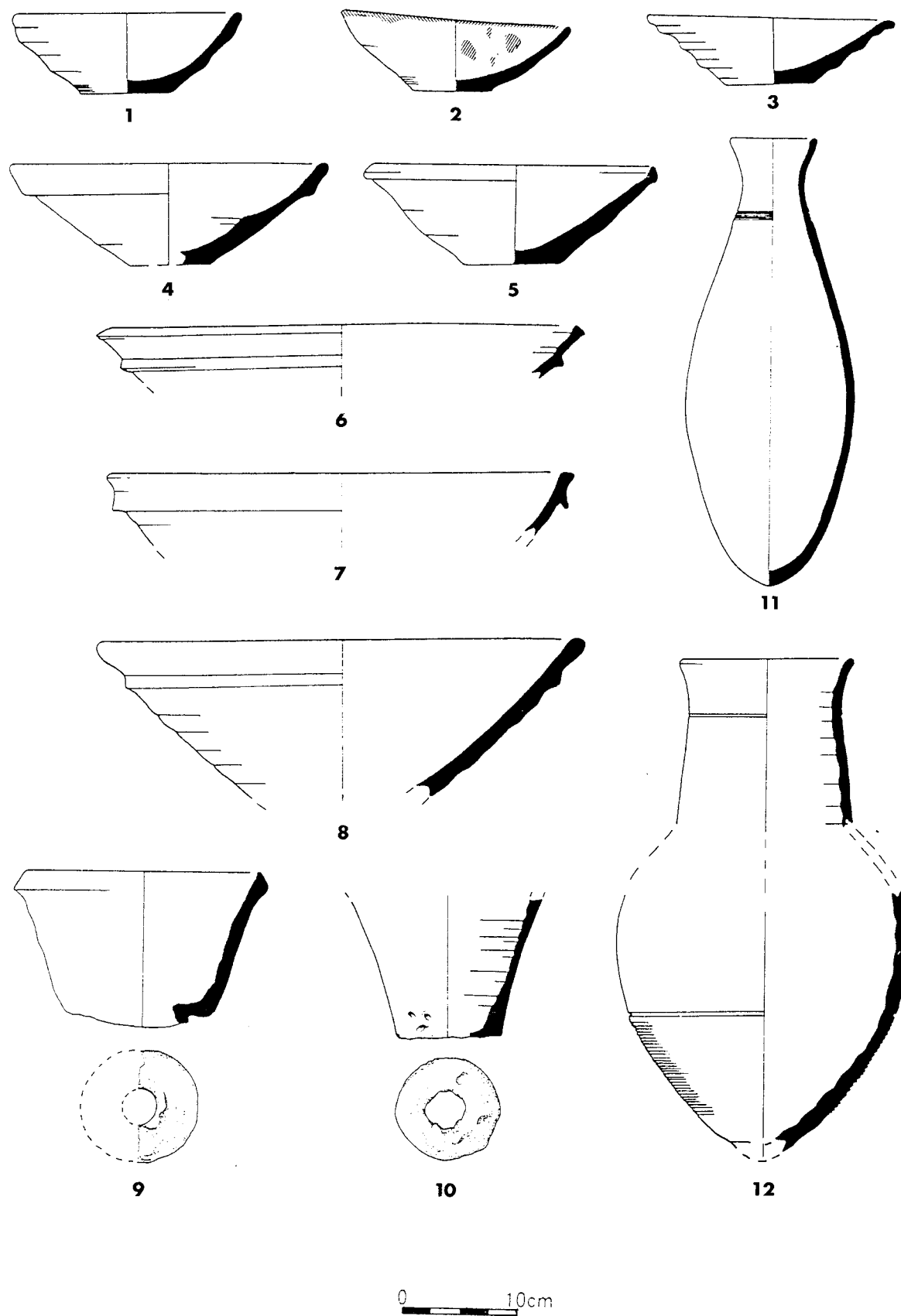


FIGURE 4.

ning bowl with a rounded base and published by T. Dothan probably belongs to the Amarna period level in phase R1a.

The *jars* are generally date-shaped and have slender (Fig. 4: 11) or broader bodies, such as the jar with a tall-neck (Fig. 4: 12). Signs of exterior scraping from turning are also evident on these vessels. Drop-shaped bottles (called “situlae” by Rowe, e.g., James and McGovern 1993: Pl. 13: 14) and a pyxis-shaped vessel similar to one from Megiddo Tomb 38 B came from the Penn excavations. Odd cone-shaped objects that might be interpreted as bread moulds also appear in Rowe’s excavations. Flower pots show up for the first time in the fifteenth century in phase R1b (Figs. 4: 9–10) while beer bottles do not appear until the thirteenth century in Levels VIII–VII.

Stands appear only in the Penn collection and include concave ring stands known in Egypt at this time, and a tall stand with small circular fenestrations similar to stands found at el-Amarna.

Conclusions

The pottery from Beth Shean is typical to the southern Levant and belongs to a regional grouping most closely identified with the Jezreel and Central Jordan valleys. Imports are limited—they don’t appear in the MB levels and only in small numbers in the fifteenth through fourteenth century layers. Egyptian-style pottery also forms a small part of the corpus (no more than 10%) beginning in the mid-fifteenth century and may center on objects serving special needs not met by the indigenous repertoire, e.g., flower pots, bread cones (?) and fenestrated stands. Several bowls (Canaanite and Egyptian-style) contained soot, suggesting a ritual function.

The Beth Shean ceramic assemblage provides us with a window into the nature of Egyptian-Canaanite interaction at a site known to be an outpost of the Eighteenth Dynasty and from a time prior to the build-up of the Nineteenth and Twentieth Dynasties.

Table 1: Comparative stratigraphy of the University of Pennsylvania and Hebrew University¹⁸

Period	Approximate dates	Penn	Hebrew University
MB IIC/III	Ends 1529/1500	Level XA	Stratum R3
LB IA	1500-1450	-- (Below IX)	Stratum R2
LB IB	1450-1400	Below IX/ Level IX	Phase R1b
LB IIA	1400-1300	Level IX	Phase R1a

18. An estimate for the end of Stratum R3 is based on the carbon-14 date mentioned above. The 1450 figure for the transition between LB IA/B is based on a lower date for the Battle of Megiddo in 1457 following regnal years for Thutmose III proposed by K. Kitchen (1987). Although Rowe did not see Stratum R2 and Phase R1b in his excavations, pottery from these levels appear in the Penn plates as Below IX. In cases where they dug too deep, pottery attributed to Level IX by Rowe includes pottery from Phase R1b.

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The Pottery of Level 12 from Tell 'Arqa in North Lebanon

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Abstract

Tell Arqa is one of the most important sites in North Lebanon, excavated since 1972 by a Franco-Lebanese team. This paper focuses on the Late Bronze Age I (1550–1400 B.C.) pottery of Level 12 of Arqa. Three stratigraphic sub-levels were unearthed of which one, 12B2, witnessed a major destruction that may be attributed to Thutmose III. Most of the vessels found in Level 12 have a morphological and technological continuity with Level 13 (MBII), making it necessary to define the chronological and regional limits of LBI pottery in the Northern Levant.

Tell 'Arqa is located 20 kilometers north of Tripoli, in the southern part of the large plain of 'Akkar, also known as the Homs Gap. 'Arqa is one of the three major sites situated here along with Tell Kazel and Tell Jamous—both located in the Syrian part of the plain.

Excavations were begun in 1972 by the French Institute of Archaeology in the Near East (IFAPO) and are directed by Jean-Paul Thalmann of the University of Paris I. 'Arqa is mentioned several times in Egyptian texts dated to the Bronze Age where it is rendered as Irqata: These include the Execration Texts (Pritchard 1955: 329; Posener 1940: 90), the Annals of Tuthmosis III (Pritchard 1955: 241), and the el-Amarna letters (Moran 1987: letters No. 62, 75, 88, 100, 103, 139 and 140).

The imposing mound of 'Arqa (6.5 acres in area and 40 meters in height) is situated at the foot of Mount Lebanon overlooking the plain from its strategic location. The stratigraphy of Level 12 is confined to Area I which is ca. 600 square meters in length.¹ According to 'Arqa's stratigraphic system, the Level 12² spans the period of Late Bronze Age I.³

1. Area I, located on the western slope of the mound, is the only area still under excavation on the tell.
2. According to Arqa's recording system, the Late Bronze Age I belongs to Level 12 (stratigraphic level) and Phase L (cultural level).
3. For absolute dating of the Late Bronze Age I period, we follow the conventional dates published in the *New Encyclopedia of Archaeological Excavations in the Holy Land* 1993, 4: 1529 (1550–1400 B.C.). For the Egyptian dates relevant to our paper, we follow the *Middle Chronology* of Kenneth Kitchen 1989.

The Stratigraphy Of Level 12

Level 12 is marked by a clear destruction layer, 12B, that covers the whole of Area I.⁴ Within this level, three sub-levels were recorded: 12A, 12B and 12C- the earliest being 12C. Level 12 is, at the same time, the last stage in a process of regular development of the site that started in Level 13 (MBA II), but is distinct culturally and architecturally from it by the structures and the material culture retrieved from its *loci*. Level 12 is characterized by a coherent array of dwellings built on four terraces and set against the rampart (partly re-used from Level 13) to which a tower was added. In order to fully appreciate the original character of the pottery assemblages, a description of the stratigraphic layout of Level 12 is necessary.

Sub-level 12C

Sub-level 12C represents the earliest Late Bronze Age I settlement in Area I. It consists of a 30 cm thick fill that covers all the Level 13 structures. Patches of beaten earth floors (Floor 12/III) were found on Terraces B and C (see Fig. 1), rarely connected to earlier walls, but some do cover the Level 13 rampart, indicating the beginning of a new building level. One stone-built channel and two *tannours* were also found on Terrace B. On Terrace A, a fairly large part of a settlement was excavated with one channel, two *tannours* and a cobbled paving (Floor 12/III). Two graves were excavated as a part of this sub-level: one infant jar-burial (T12.45) and one infant pit-burial (T12.46).

Sub-level 12B

An extensive remodeling of the settlement of 12C covers all Area I. Four houses, each one occupying one terrace, were built against the inner face of the rampart. It seems that each house consisted of a cobbled courtyard and two or three adjoining rooms. There were also large open areas enclosed by walls, probably one for each house, in which was found evidence of timber shelters. These dwellings were entirely destroyed by fire. The destruction layer, 12B2, consisted of a 40 to 80 centimeter-thick layer of charcoal and fallen building debris (mudbricks and charred wooden beams) covering the beaten earth or cobbled floors of these buildings (Floor 12/II), and constituting the landmark of layer 12B. Crushed pottery was found on these floors and in the destruction layer.

At the top of this burnt layer, where there was more brick debris and less pottery, and everywhere where destruction debris from 12B2 was not found in situ, the relevant *loci* were ascribed to a different layer, 12B1. Ten burials (four infant jar-burials: T12.47, T12.48, T12.49 and T12.59, five infant pit-burials: T12.57(A), T12.57(B), T12.57(C), T12.58 and T12.60, and one collective cist burial: T12.67) were found under Floor 12/II or in connection with it.

Sub-level 12A

After the destruction of 12B, the ruins of the houses were partially reused in a very limited area only (Terrace B) and new beaten earth floors were laid down (Floor 12/I). This was obviously a "squatter" occupation of limited extent and duration that indicates an immediate reoccupation of Area I after the fire of 12B. A small number of ceramic vessels was found

4. The topographic and stratigraphic description of Level 12 is based on the forthcoming publication of Tell 'Arqa by Jean-Paul Thalmann (forthcoming). For a list of previously published reports of the site, see Thalmann 1993.

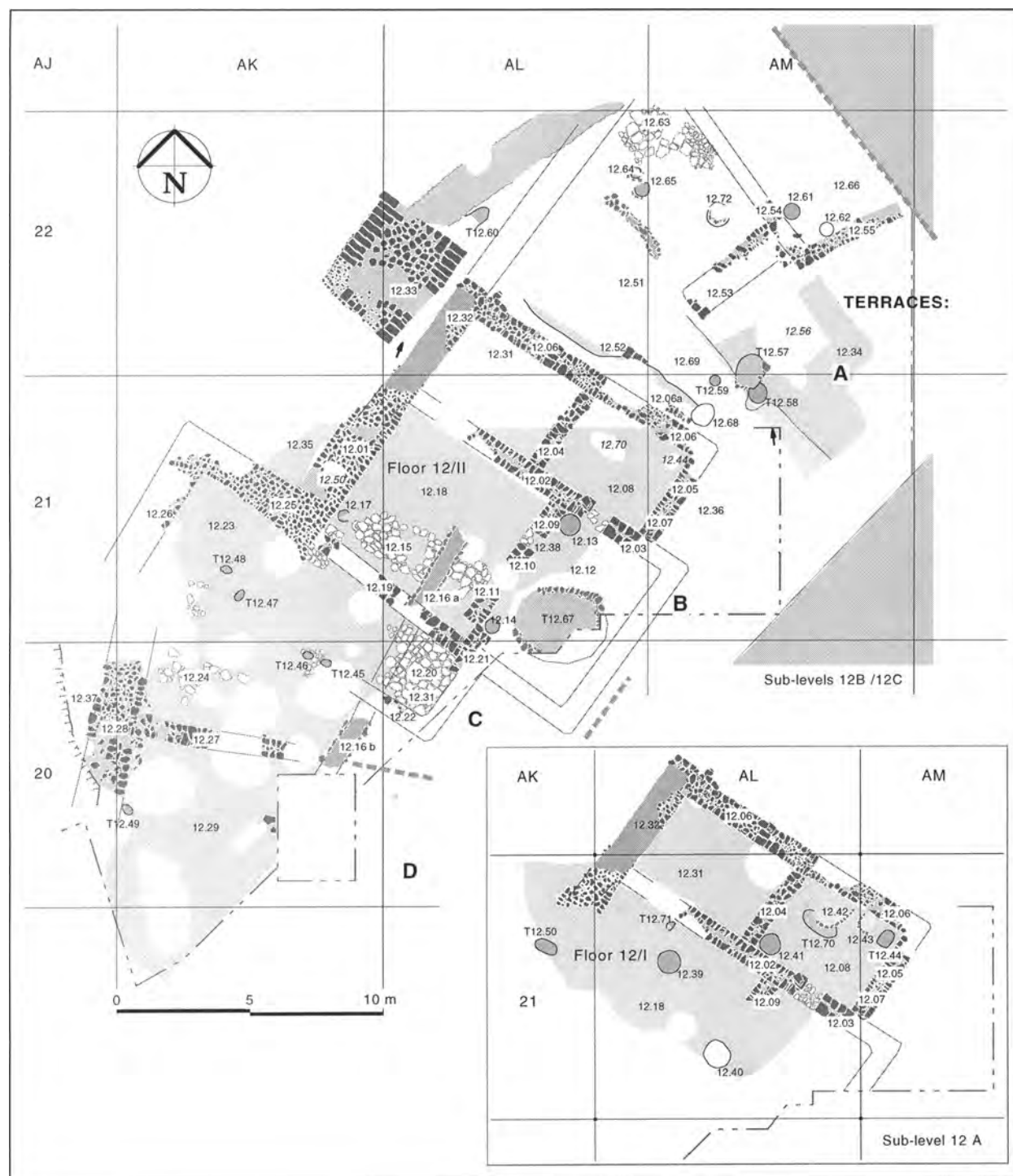


FIGURE 1.

in situ, with the major part of the pottery of 12A coming from a refuse pit dug in Terrace B and from nine burials (four infant jar-burials: T12.56(B), T12.56(D), T12.56(E) and T12.71, one adult jar-burial: T12.70, and three infant pit-burials: T12.44, T12.56(A) and T12.56(C)) on Terraces A and B- either covered by Floor 12/I (e.g., T12.44, T12.50 and T12.70) or dug into it (e.g., T12.56 and T12.70).

The Pottery Of Level 12

The pottery from Level 12 presents an original character that was unknown before in the Northern Levant. Some one hundred complete vessels were found at 'Arqa in sealed *loci*. These include pottery in the destruction layer 12B2, on the floors 12/I, 12/II and 12/III, in silos, and in tombs. Examples of this material were selected for this paper in order to prove the originality of Late Bronze Age I pottery in 'Arqa.

All the vessels of Level 12 are wheel-made except cooking pots (which are hand-made), and the jars and pithoi (which combine two techniques of coil and wheel-made construction). Moreover, many vessels retained the same shapes and decorative techniques as the Level 13 repertoire. Nevertheless, new shapes do appear in Level 12: ring-burnished straight-sided plates, flaring carinated bowls, cooking pots with everted triangular or interior-ridged rims, elongated jars, and pithoi with moulded rims. In addition, together with the well-fired and fine levigated basalt-and-limestone-tempered clay of the Middle Bronze Age, a new clay appears with a high proportion of vegetal inclusions, a fired buff exterior, and a hard grey core. An analysis of the main pottery types will demonstrate the characteristics of the Level 12 assemblage.

Plates

One of the pottery hallmarks of Level 12 is Plate C4.⁵ This plate has a straight-sided body (Fig. 2: 14) or a more rounded one (Fig. 2: 16). Rims are generally rounded or square. The ware in which plates C4 were thrown is orange and highly tempered with straw, basalt and limestone. Like Hazor (Yadin et al. 1958: pl. CI: 5,7; Yadin et al. 1960: pl. CIX: 1, 7, 9; Yadin et al. 1961: pl. CCLXXXVIII: 3; Ben-Tor et al. 1997: pl. II.14: 8,11) and Beth Shan (Oren 1973: fig. 27: 3,6,9,18) where this type is "extremely popular in MBII-LBI" (Oren 1973: 69) assemblages, plate C4 is well represented in Arqa's pottery corpus. It is interesting to note that some of the plates of Hazor are also made in an "orange ware" and are burnished entirely (Ben-Tor et al. 1997: pl. II.14: 12). If nearly all examples of these plates were found in layer 12B2, rims and fragments of this type are already present in layer 12C fills, in contrast with Tell Nebi Mend where this type of plate appears at the end of Late Bronze Age I/Early Late Bronze Age IIA (Bourke 1993: 156; fig. 19: 14). The particularity of this plate is the knife-trimming on a potter's wheel that gives a characteristic burnishing effect on the inside and the outside. This type of burnishing sets apart 'Arqa from Megiddo, Tyre, Tell el-Ghassil, Kamed el-Loz, and Pella where ring-based plates are either plain (Guy 1938: pl. 24: 1; pl. 40: 11; pl. 42: 9,20; pl. 43: 17; pl. 45: 6; pl.49: 1,20; pl.50: 3; Bikai 1978: pl. LIII: 14,16; Metzger 1993: pl. 89: 1; pl. 79: 9,14; pl. 89: 3,6; Doumet-Serhal 1996: pl. 36: 6,7; Hennessy et al. 1981: fig. 5: 32; fig. 7: 19) or burnished on the interior (Guy 1938: pl. 43: 16; pl.45: 5; Bikai 1978: pl. LIIA: 7). Some examples (Fig. 2: 13) are painted in black and red paint and burnished, just like in Sarepta (Anderson 1988: pl. 21: 9).

Simple plates C1 (flat base, straight sides), which are very popular at the beginning of the Late Bronze Age I at Hazor (Yadin et al. 1961: pl. CCLXI: 1-10; pl. CCLXXXVIII: 1), appear in Level 12 (Fig. 2: 12). They are made from a coarse ware, manufactured with the minimal amount of care, and are wet-smoothed. C1 continues in the Late Bronze Age II at 'Arqa. Another variant, C2.a, has a more upturned rim (Fig. 2: 15).

5. The number following a class of vessels follows Arqa's typological nomenclature system.

MISSION FRANÇAISE DE TELL 'ARQA
البعثة الفرنسية في تل عرقا

PL. II

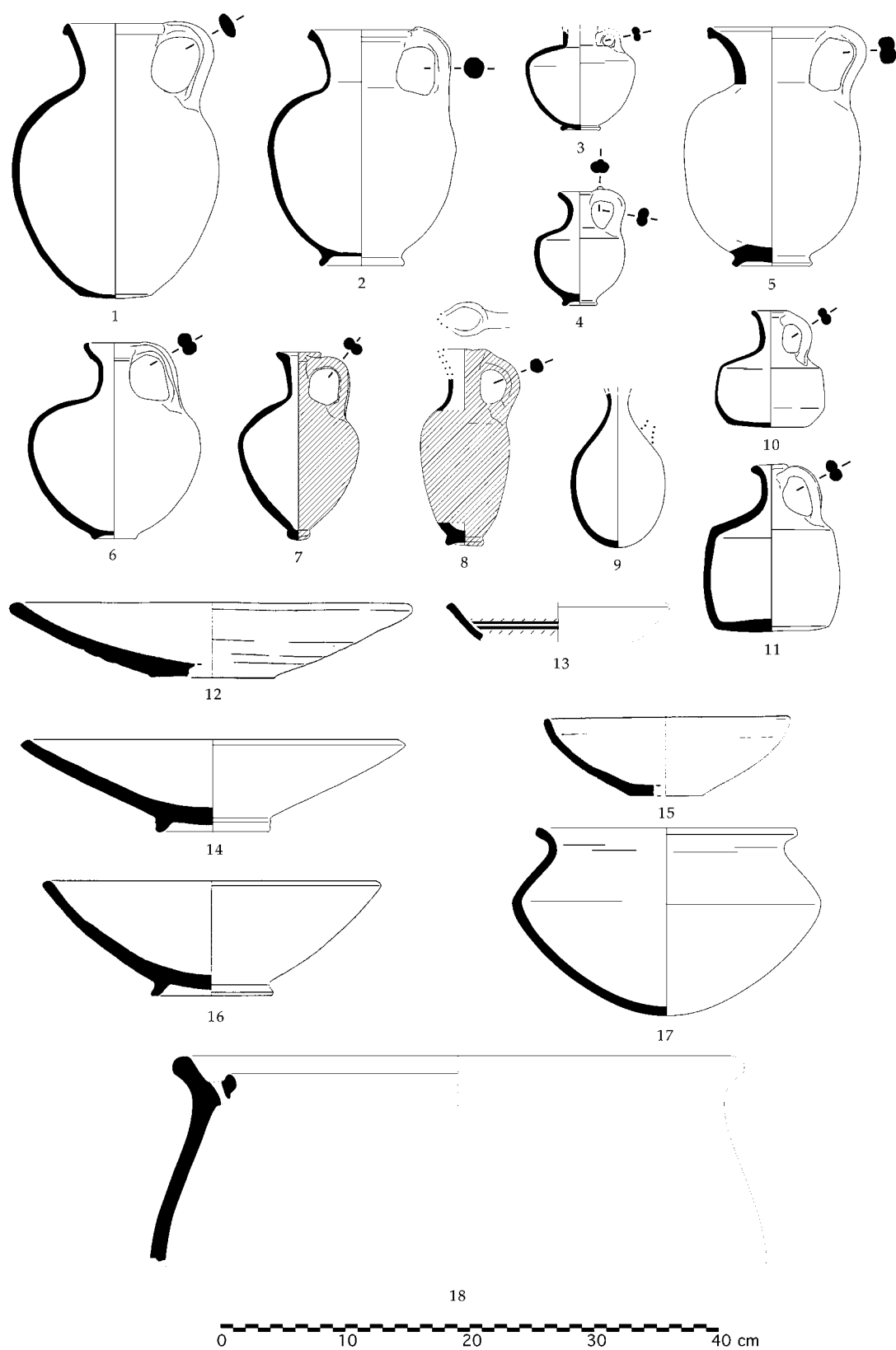


FIGURE 2.

Bowls

Another hallmark of the Level 12 corpus is the “flaring carinated” bowl, E5, which appears only in Level 12, unlike in Palestine where it occurs already in the Middle Bronze Age II (Amiran 1970: 94). The main characteristic feature of bowl E5 is the three incised lines on the rim (Fig. 3: 3, 8, 13, 14). This decoration appears also on the small pots N5 (see below) and seems to be a decoration peculiar to ‘Arqa, since, apart from one example unburnished from Alalakh (Heinz 1992: pl. 6: 32), no other site has yet yielded in amounts such a decoration. All the E5 bowls demonstrate careful manufacture using a fine levigated clay and shiny inner and outer horizontal wheel-burnishing. This type of bowl continues into Level 11, but with a deeper shape and without any burnishing or incisions.

Another type of bowl has a more rounded carination. Bowl E4 always has a concave disc-base and displays a wheel-burnishing over the entire body (Fig. 3: 1). Some examples are painted and burnished (Fig. 3: 5), or have two adjoining handles (Fig. 3: 4). Simple bowls, E2.g, are present in Level 12 and feature another original decoration: two ridges on the inner part of the rim (Fig. 3: 9). Only Tell Nebi Mend has produced a parallel to this decoration, which according to Bourke, dates to “the transition Late Bronze Age I/Late Bronze Age II” (1993: 184; fig. 20: 2).

Jugs and juglets

Except dippers, all the jugs and juglets found in Level 12 come from tombs. Here again, we witness a survival in shapes and decoration from Level 13. These include the double (Fig. 2: 3–7, 10, 11) or shoulder-loop (Fig. 2: 3) handle, the piriform (Fig. 2: 7) or cylindrical (Fig. 2: 10, 11) body, the button base (Fig. 2: 7), or even the pellet on top of the handle (pl. II: 4). Nearly all these vessels display a shiny horizontal burnishing. Most of the jugs are thrown using a fine and well-fired ware (pl. II: 1–6, 10, 11), except for the piriform juglet (Fig. 2: 7), which is fired buff and made with a different clay tempered with a kind of limestone unknown to the ‘Akkar region. This juglet might be an import from the south of Lebanon, perhaps Byblos. Juglet Fig. 2: 8 is obviously a local adaptation of the latter piriform juglet. Dippers are very rare in Level 12 at ‘Arqa. While this kind of vessel is frequently found in tombs in the Southern Levant, the two baggy-shaped examples found in ‘Arqa are from the destruction layer 12B2 (Fig. 2: 9).

Cooking pots

A development in the rims of Late Bronze Age I cooking pots is generally agreed upon (Amiran 1970: 135; Doumet-Serhal 1996: 96; Yadin et al. 1989: 56)- from the everted thickened or rounded rim (Fig. 2: 17), to the everted triangular one (Fig. 3: 16). At ‘Arqa, every-one of these types coexisted in all layers of Level 12. They are hand-made and are tempered with calcite. Another type made in an orange clay and highly tempered with calcite had a pierced inner ledge rim destined to receive a lid (Fig. 2: 18). This type according to Amiran (1970: 135) “has neither forerunners in the preceding period nor any descendants in the following”.

Closed pots N

Most of these closed pots are distinguished by their thin walls and careful finish. The big ones (Fig. 3: 2,15,17,18) retain the same shapes and fabric of Level 13. They are wheel-burnished horizontally and are made from a well levigated and well fired clay. Fig. 3: 15 displays an “old” feature with the narrow constricted neck found on some bowls and jugs of Level 13.

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PL. III

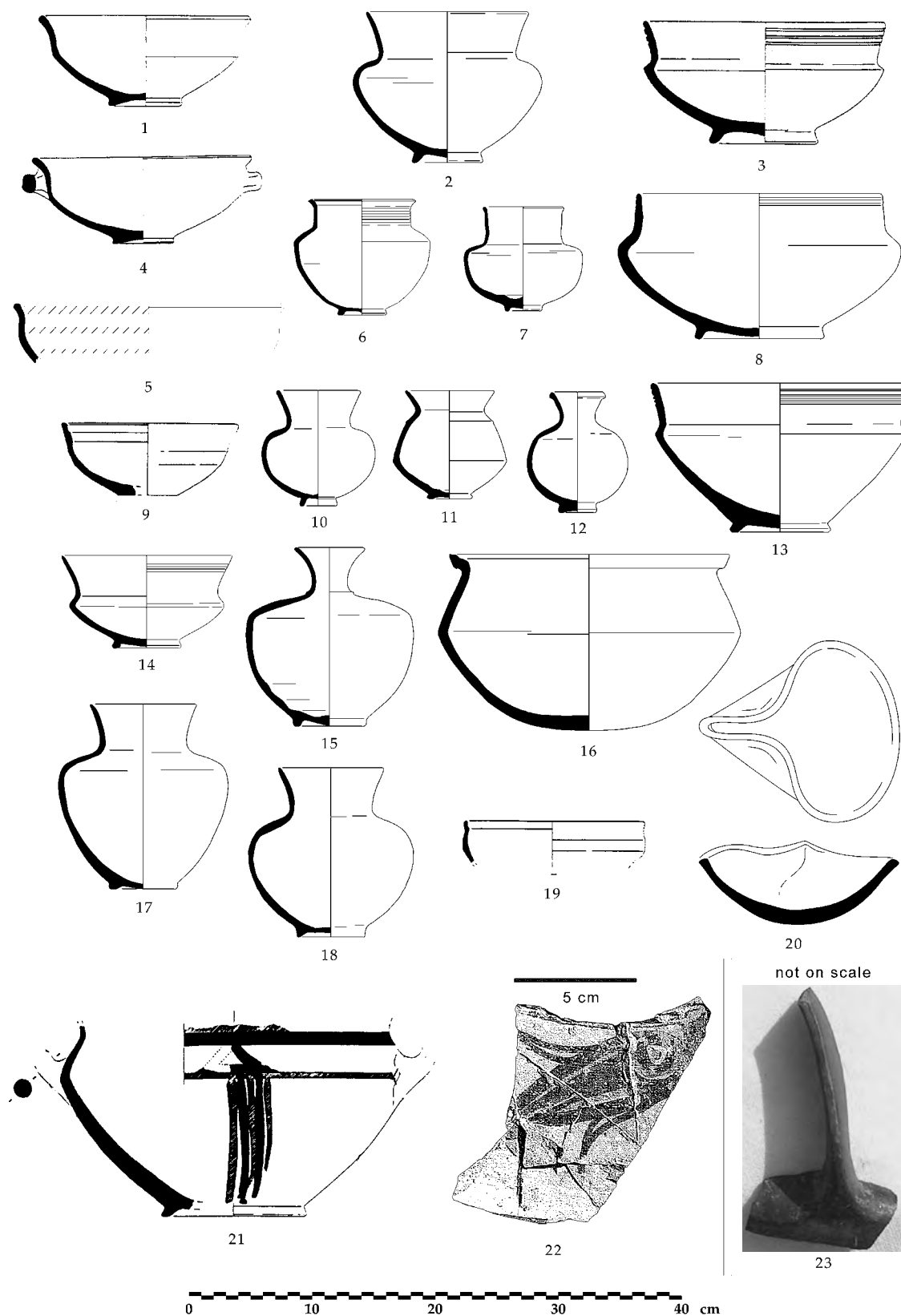


FIGURE 3.

The small pots, N5, on pl. III are the best example for tracing the evolution of the carinated pot in 'Arqa. Beginning with the sharply carinated and short-necked pot from Level 13, they then start to develop rounded bodies and tall necks in Level 12 (Fig. 3: 7, 10, 12). Although most continue to be wheel-burnished horizontally, new biconical shapes (found on Floor 12/II) begin to emerge, and are plain and made in a bright orange clay (Fig. 3: 11). Others have the typical Level 12 three-incised-lines decoration (Fig. 3: 6).

Jars

Three types of jars exist in Level 12. Type R7 shows typological continuity with Level 13 in the squat body and the vertical burnishing (Fig. 4: 4, 5). Bases can be either flat (another carry-over from Level 13) or slightly rounded.

Type R7.a reveals the same characteristics of R7 but with a large neck (Fig. 4: 1–3). If jars R8 are never burnished, some do have painted bichrome decoration (Fig. 4: 7). This is quite unusual in 'Arqa where painted decoration is quite rare in all periods, and was never a characteristic of the material culture. Jars R9 loses all the "MB" features: the handles are of the loop variety and placed very high, the neck is short, the body is elongated, and the ware is coarse. One of them on Fig. 4: 6 has a sign incised on the shoulder. This jar was found in a tomb from sub-level 12A (T. 12.56 D) and has a perfect parallel in Tyre (Bikai 1978: pl. LIIA: 13).

Pithoi

Pithoi S2 (Fig. 4: 8, 10) were found on floor 12/II. They are of a well-known type widely distributed in Late Bronze Age I in the Northern Levant, especially at Hazor (Yadin et al. 1958: pl. CXLI: 8,9 in Cistern 7021), and in sites of the Bekaa Valley- Tell Nebi Mend (Bourke 1993: fig. 14: 1,4), Tell el-Ghassil (Doumet-Serhal 1996: pl. 39: 15; pl. 47: 8) and Kamed el-Loz (Metzger 1993: pl. 113: 14). R. Amiran (1970: 143) says this type "seems to belong to the northern Canaanite ceramic culture" since it occurs only in northern sites.

Another type, S1, was found in a tomb (T. 12.70) in the latest settlement of Level 12 (Fig. 4: 9). It is made in a very hard and well-baked clay typical of jars of the Middle Bronze Age in 'Arqa. The flat base and the moulded everted rim are also "old" features.

Lamps

All the lamps found in Level 12 come from Floor 12/II (Fig. 3: 20), except one found in the collective cist tomb T12.67. They are of the typical shape found in the Levant in the Middle as well as in the Late Bronze Age.

Imported pottery

Although imported material is rare in 'Arqa, six vessels were found lying crushed and burnt among other local vessels on Floor 12/II: A *Red Lustrous Wheel-Made Ware* bottle (Fig. 4: 11) of Eriksson's type VI A1a (Eriksson 1993: 22), two cypriot *Base-Ring I* wishbone handles (Fig. 3: 23), one cypriot *Monochrome* bowl (pl. III: 19), and one large pots of the *Cypriote Bichrome Ware* (Fig. 3: 22). The pot shown on figure 3: 21, possible Palestinian Bichrome Ware, has a rare vertical decoration on the lower body found only in Beth Shan in Tomb 27 (Oren 1973: fig. 36: 7).

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PL. IV

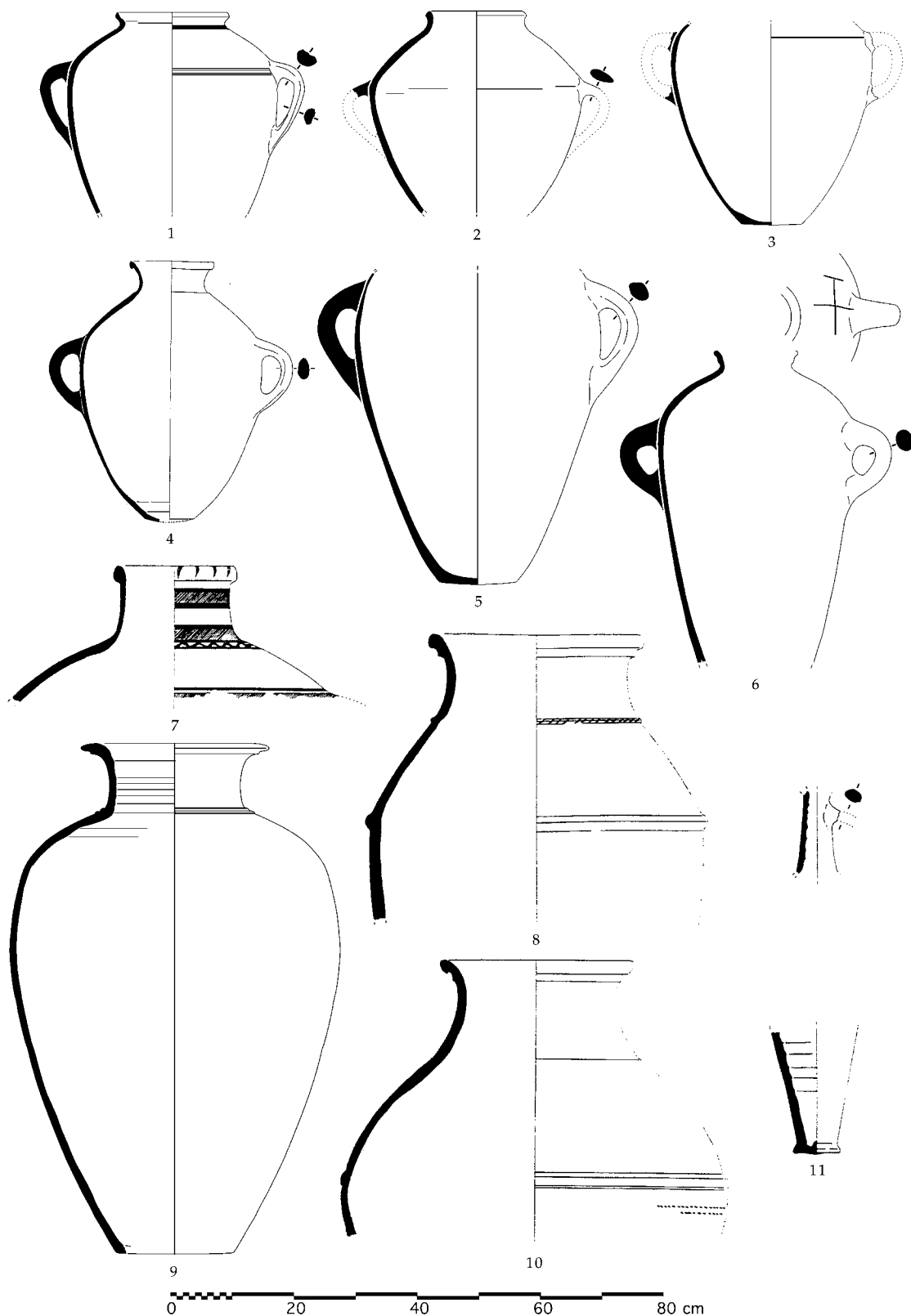


FIGURE 4.

Synthesis

Tentative absolute dating of Level 12 is based on the destruction layer found in 12B: The site was destroyed completely by fire. If we refer to Egyptian texts, Thutmosis III, in the year 42 of his reign, “was on the coast road in order to destroy the town of Irqata” (Pritchard 1955: 241). According to K. Kitchen (1987), the most likely date for the beginning of Thutmosis III’s reign is 1479, placing his 42nd campaign around 1437 B.C. If we assume that Thutmosis III destroyed ‘Arqa by fire, and if we identify this destruction with layer 12B2, giving each sub-level an average of 25 years, we can suggest the following chronological scheme: 12C can be dated between 1487 and 1462 B.C., 12B between 1462 and 1437 B.C., and 12A between 1437 and 1412 B.C. Subsequently, all of Level 12 will fit into the fifteenth century. But this is just a hypothesis that doesn’t benefit from any irrefutable support.

Still, the ceramic corpus from Level 12 at ‘Arqa displays shapes, techniques and fabrics traditionally attributed to the Middle Bronze Age. Even though most of these vessels were found in tombs, the heirloom explanation is not a legitimate one. Indeed, vessels of the same types were found on the floors of houses. Furthermore, it is unreasonable to think that people might keep-and use- dozens of common vessels for two or three hundred years before finally using them as heirlooms or for jar burials. These are not luxury objects that could be kept for their intrinsic value. A more *logic* explanation is to be found in the continual employing of “old” shapes and techniques; and if we examine the development of the plain of ‘Akkar in the Bronze Age, we find that this explanation makes sense. During the Early and the Middle Bronze Ages, the plain of ‘Akkar developed at its own rate, without any major influences from its neighbours. This can be easily seen in the firing techniques that were used and in the decoration of the ceramics from these periods. This situation would then have persisted until the Egyptian organization of the plain initiated by Thutmosis III. The three-sites distribution of the plain disappeared and Tell Kazel (ancient Simirra) became the centre of the Egyptian administration in this region. This administrative change which led to the retrogradation of ‘Arqa into a rural site, is reflected in the Level 11 (Late Bronze Age II) material culture in ‘Arqa- the quality of the ceramic production declines drastically, and all the well-made, time-consuming and costly features of the Level 12 pottery (vertical or horizontal wheel-burnishing, well-fired clay, thin walls, flat bases, the three-incised-lines decoration) disappear. So until the political changes of Thutmosis III, the inhabitants of ‘Arqa continued using “traditional” techniques and shapes in their pottery-making that had gone long into oblivion in the Southern Levant after the Egyptian conquests and the destructions of the middle of the sixteenth century B.C.

the Levant is not a homogeneous cultural *koinè*. It is on the contrary subdivided into small regions or “cultural provinces” (Bourke 1993: 167) that have their own rytme of development. Reflections on pottery should integrate these regional variations in shapes and manufacture. To this day, studies of Late Bronze Age I pottery are subject to a single chronological and typological diagram issued, for the most part of it, from excavations originating in the Southern Levant. What is true for the Southern Levant cannot be applied wholesale to the northern part of it. Even though there is still a lack of excavated sites in this region, the Level 12 pottery of Tell ‘Arqa is important proof that the generalized notion of a single uniform culture extending over the entire Levant is no longer valid.

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The Organisation of Pottery Production at Middle Assyrian Tell Sabi Abyad, Syria: a Brief Sketch

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Abstract

Some finds at the Middle Assyrian site of Sabi Abyad strongly suggest that pottery was produced locally at the site. This short paper discusses those finds and presents some preliminary conclusions about the way that pottery production was organised.

Introduction

Tell Sabi Abyad is located in the Balikh Valley in the North of Syria. In the Middle Assyrian period (between ca. 1233 and 1187 B.C., during the reigns of Tukulti-Ninurta I, Assur-nadin-apli and Assur-nirari III), it housed a private agricultural estate (or *dunnu*) belonging to an Assyrian grand vizier (Akkermans and Wiggermann 1999, Wiggermann 2000). The excavated area includes a almost square, walled settlement with a central tower, a representative residence, administrative buildings, open areas and buildings used as workshops and domestic spaces (Fig. 1). Middle Assyrian Sabi Abyad has yielded numerous finds that point to the *production* of pottery at the site.

This paper will briefly discuss those finds and what they might tell us about the organisation of pottery production. First a short summary of models describing different kinds of production organisation is presented. These modes of production are used to archaeologically recognise and classify different kinds of production. They give us an indication of what kind of information we need before attempting to present an interpretation of the organisation of production. Then, the evidence itself is discussed and some preliminary conclusions on the organisation of pottery production at Sabi Abyad will be drawn. Of course, a short paper as this can only be a brief sketch of the issue. An extensive discussion of the topic will be presented in my PhD dissertation (Duistermaat n.d.).

The organisation of pottery production

Several publications classify the organisation of pottery production from simple to more complex *modes* of production (e.g., Van der Leeuw 1977, Peacock 1982, Rice 1987, Annis 1996). Most of these models are based on ethnographical information and are fairly similar to each other, although there are differences in terminology. Here, a short summary of the most current typology follows (after Peacock 1982: 8–11). Of course, it has to be realised that the borders between types cannot always be drawn clearly, and examples exist of pottery industries that combine elements of different types.

Household or domestic production

Each household in principle makes pottery only for its own consumption. In ethnographical situations, mostly women are producing. Pots are made only sporadically, when the need arises. They are generally handmade with simple technologies, and fired in open fires.

Household industry

This type includes the first steps towards specialisation. Potting is a part-time activity next to other subsistence activities, and involves professional potters. Production is mostly the task of women, and the technology is still simple although a slow turntable may be used. Firings take place in an open fire or a simple kiln or oven.

Individual workshop

In the individual workshop, potting is the main source of income. It can be practised part-time, in certain periods of the year and next to other means of subsistence. Production is oriented towards the market and is mainly in the hands of men. Technology will be more developed, including the use of the fast (kick) wheel and kilns. The potter can employ a number of assistants.

Nucleated workshop

In this type several individual workshops are located together. This may be for reasons of availability of the material, labour, and markets or for the economical use of kilns. Potting is now a major source of income, mostly practised by men and year-round if possible. All available technological aids are used. The products are often fairly standardised and of a high quality.

Manufactory

Manufactories are large production facilities in which a number of professionals produce a highly specialised product. The distinction between the manufactory and the large workshop are mainly to be found in the scale of the enterprise: D. Peacock suggests speaking of a manufactory if the workshop consists of more than 12 people. Archaeological evidence for a manufactory will include the size of the production facilities, the degree of specialisation in the products, the scale of the output and evidence for individual worker specialisation.

Estate production

In principle, estate production was organised to fulfil the internal needs of the estate, to avoid unnecessary expenses. Products might also be sold at a market. Estate production can take the shape of household production or a more complex type of organisation. The distinguishing factor is the dependency on, and the orientation towards, the estate organisation.

Military and official production

In Roman times, this kind of production seems to have taken place especially when local production in a newly conquered area could not meet the demands of the garrison. It is expected that military production would be organised very efficiently, using the available manpower as economically as possible. Technologically it would use the best available methods. *Municipal* and *state organised* productions are also in this class.

From this short outline of the modes of production it is clear that there are a number of variables that are important when drawing conclusions on the organisation of pottery production. These are among others:

- The location of the workshop
- The sex of the potter
- The scale of production (size of the work unit and size of the output) and intensity of production (full-time or part-time)
 - Which part of the total income is generated by pottery production
 - The destination of the products: the own household, markets, an estate, state institutions or other
 - The degree of specialisation of the production, the used technology, and the quality of the products
 - The standardisation of production
 - The presence of attached (organised by the elite) or independent craftsmen

Archaeologists can use both direct and indirect information to draw conclusions on these aspects. Direct evidence includes the find of workshops, kilns, tools, raw materials, unfinished products and wasters, as well as textual evidence dealing with the production and the distribution of the products. Indirect evidence has to be drawn from the ceramics in the archaeological record, and includes information on the standardisation and variability of the ceramic corpus in terms of shape, size, used raw materials and techniques, the used techniques for firing and the geographical distribution of characteristic products.

Local pottery production at Sabi Abyad

Several pieces of direct evidence are available at Sabi Abyad that point to the local production of pottery. They include:

- Unfired pottery and pieces of raw clay
- Wasters (overfired and damaged pots)
- A building that was used as a workshop
- One large and three small updraft kilns

Middle Assyrian ceramics are characterised all over the Middle Assyrian Empire by a limited number of fairly standardised shapes. These include small and large carinated bowls, sieves, large ovoid jars, smaller jars, deep bowls and pots with “hammer rims”, thin walled goblets with nipple bases, and pot stands with a characteristic folded rim (see Akkermans et al. 1993, Pfälzner 1997: Fig. 2). All of these shapes are present among the hundreds of unfired fragments found at the site, proving that the whole “standard” repertoire of Middle Assyrian pottery was produced locally (Fig. 2). All of the unfired fragments were wheel made, with the same techniques as the fired pottery. No unfired handmade fragments were found, nor any decorated pieces. Also, as far as can be macroscopically established, the kind of clay and inclusions in the unfired material is similar to the fired ceramics. It can be concluded that most, if not all, of the normal pottery corpus was made locally at the site. Conclusions about the production location of handmade and special shapes and pottery made from different clays and with different inclusions must await thin-sections and chemical analyses.

Wasters, brittle green molten pottery, were found in small quantities all over the site in different levels, pointing to local pottery production during the complete period of Middle Assyrian occupation. The absence of large concentrations of wasters in the surroundings of the kilns is remarkable.

Three main find groups suggest that a building in the Southeast of the settlement was connected to pottery production (see Fig. 1). First, in the North of the courtyard of this build-



FIGURE 1. Sketch plan of the excavations at Tell Sabi Abyad, the Middle Assyrian settlement. The shaded building in the east is the pottery workshop.

ing, a large number of thin-walled goblets and small carinated bowls was found. They are of almost identical shape and size (Fig. 3). Their number is much larger than any other group of small bowls or goblets found elsewhere at the site and, moreover, most of them are deformed, cracked or sintered. Some have been repaired with gypsum. They are interpreted as the misfired remnants of one or more production events. A second piece of evidence consists of several bowls that were severely misfired and filled with gypsum found in the same courtyard (Fig. 4). It seems that they were used to hold the gypsum for the repair of damaged or cracked pottery vessels, suggesting that the repair of vessels was actually carried out in this courtyard. Other tools connected to pottery production are less easy to identify. In both modern and ancient workshops, the toolkit usually does not consist of more than a length of thread, a knife, some smooth stones, and a bowl of water. These tools are either not pre-

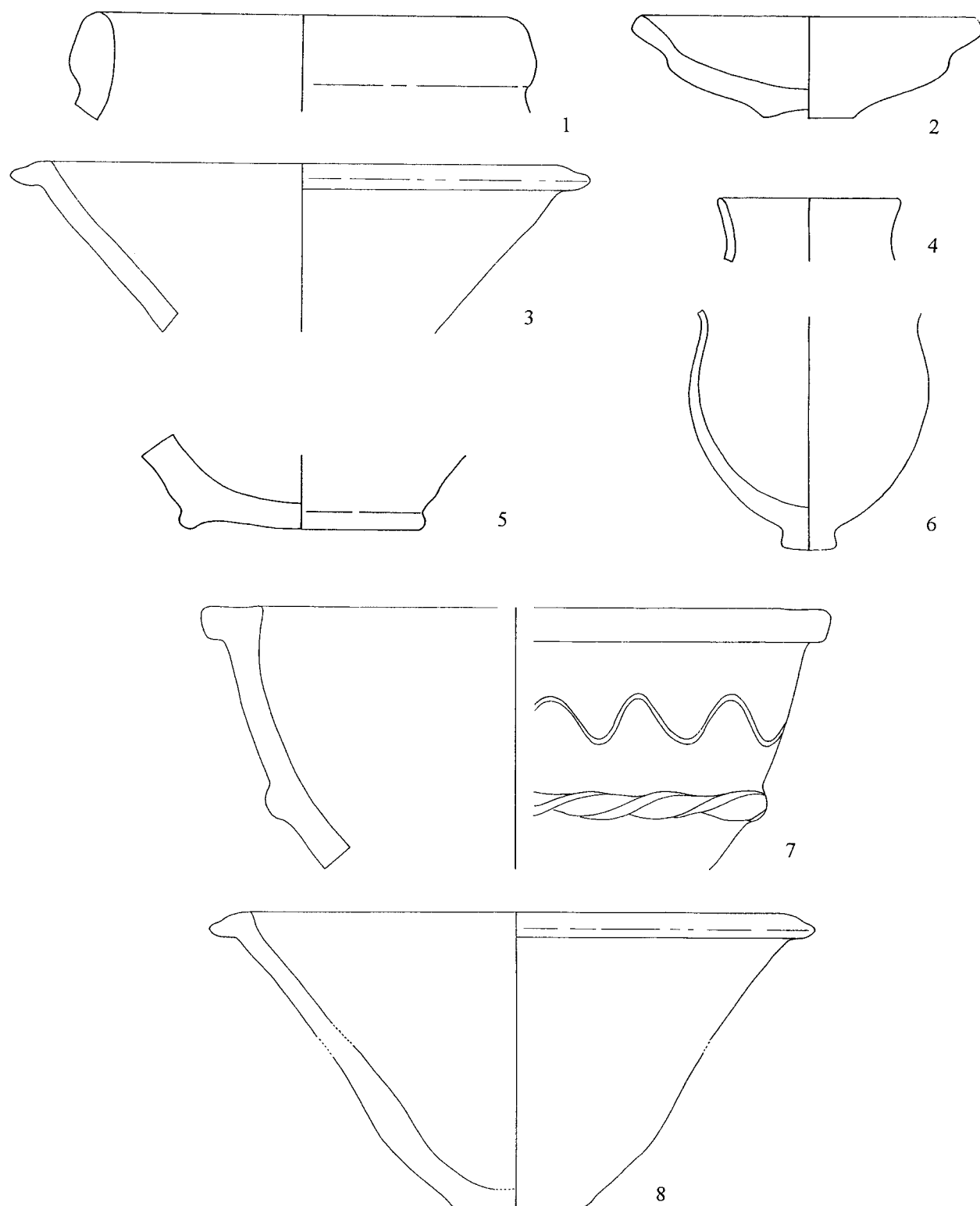


FIGURE 2. A selection of unbaked pottery fragments. Nos. 1–6: scale 1: 2, nos. 7,8: scale 1: 3.

served in the archaeological record, or difficult to recognise as potter's tools. Stone tools like polishing stones and grinders were found in several rooms of the complex, but also in the rest of the settlement. Considering the end product of his work, the potter working at Sabi Abyad must have used a fast wheel or kick wheel. No obvious installation for a wheel has



FIGURE 3. A selection of small bowls and goblets from the pottery workshop. Note the cracks and repairs in many of the vessels.

been found yet. Possibly the wheel itself, or the base stone, was placed in a pit. Several pits have been found in and around the building, but whether they were used for a wheel construction is not clear. Throughout the whole settlement, several stones have been found with a smooth, drilled hole, which could have been used as a base stone for the pivot of the wheel. Several of these stones were also found in this building. A third indication for the location of pottery production in this building is the find of many pieces of unfired pottery. They are located mainly in the courtyard, but also in the northern room and in the Western part of the building. Close to the northern room, a large piece of raw clay was found.

In the main room of the same building, several cuneiform texts were found belonging to lower officials at the *dunnu*. These texts are not connected to pottery production (Frans Wiggermann, pers. comm.). It seems thus that several different specialists or officials used the building, or that the potter and his family had other tasks as well.

The kilns

One large updraft kiln was found outside the northern wall of the *dunnu* (Fig. 5, Akkermans and Duistermaat 2001), while three smaller ones were dug into roomfill of spaces within the *dunnu*. All kilns have a rectangular fire chamber with plastered sides. The plaster has completely molten and turned bright green or grey-green, while the bricks of the fire chamber walls have been baked by the heat. In the large kiln and in one of the small kilns, the floor of the pottery chamber was also preserved. The floor is supported by mud brick



FIGURE 4. Three bowls containing gypsum for the repair of vessels, from the pottery workshop.

arches and has holes to let the hot gasses pass to the pottery stacked in the upper chamber. Nothing is preserved of the upper structure of the kilns.

Updraft kilns of this type are professional kilns that facilitate the firing of large quantities of pottery in controlled circumstances. While the large kiln could hold large numbers of vessels of all sizes, the smaller kilns were perhaps only used for the smaller vessels such as bowls and cups or for smaller kiln loads.

In kilns of this type, a temperature between 850 and 1100 C could easily be reached. This is the temperature at which most of the Sabi Abyad pottery was fired. An updraft kiln is not particularly suited for firing in a reduced atmosphere (Swan 1984: 34, 35; Rye 1981: 100). This shows in the pottery from Sabi Abyad that for the most part is fired in oxidising circumstances.

Indirect evidence for the organisation of production

Other, indirect evidence for the *way* pottery was produced is found in the characteristics of the pottery itself. We have already seen that the majority of the pottery can be grouped in a few shape types that seem to make up the standard repertoire at every Middle Assyrian site excavated so far (cf. also Pfälzner 1995). Vessel size seems to be fairly standardised, too. The carinated bowls come in three size classes, while other shapes like the large ovoid jars are all of approximately the same size.

For the production of these common vessels, efficient techniques were used. The use of the fast wheel insures a fast production speed. Small vessels were thrown off the hump, so



FIGURE 5. One of the updraft pottery kilns. The perforated kiln floor as well as two flues are visible.

that the clay mass had to be centred only once on the wheelhead to make a large number of vessels in a short time. Larger vessels were made in different production stages with drying periods in between. When making these vessels in large series, production could be quick and efficient. These production techniques also suggest that several persons were involved in the work, for example a master potter and his assistants.

Hardly any time was spent on subsequent treatment like slipping, burnishing or decoration. Only very few vessels have handles or spouts, additions that cost time to make and that slow down the work speed. It thus seems that for the majority of the pottery, and especially for the locally produced pottery, efficiency and speed as well as standardisation in shapes and sizes was prioritised.

A small percentage of all the pottery stands apart from the “standard” corpus. This includes the huge storage vessels that are handmade with slab-building techniques, vessels with more or less elaborate incised or applied decorations, and black burnished bowls fired in a reduced kiln atmosphere. Many of these vessels are made from the same ware as the standard corpus and have the same general shape, but vary in rim shape or other details. Pottery made from a different kind of clay or with different inclusions (like the cooking ware) was possibly produced in another region.

It thus seems that the potters of Sabi Abyad produced a standardised “basic” corpus of vessels. Next to that, they, or other potters, found the time and possibilities to make less uniform shapes and handmade vessels. A small part of the pottery found at Sabi Abyad most probably came to the site as a result of trade or exchange, either as packaging material or itself the object of trade.

Information about pottery production from cuneiform texts

About three hundred cuneiform texts, fragments and envelopes have been found in several levels of the *dunnu*. They give a lively picture of the business in and around Sabi Abyad. Since the *dunnu* was an agricultural production centre, many texts deal with the organisation of agriculture (Wiggermann 2000). Although they are not directly concerned with pottery production, they do sketch the context in which pottery production took place.

In one text only, a potter is explicitly mentioned. In this text, Mudammeq-Assur asks the steward of the *dunnu* (at this time Mannu ki-Adad) why he didn't send a potter to the brewer in *Dunnu-Assur*, probably located near Tell Abyad. In the text, the potter is male, and at that moment clearly functioning under the authority of the *dunnu* (Frans Wiggermann pers. comm.).

According to Frans Wiggermann, the population of Sabi Abyad and its surrounding land, as far as mentioned in the texts, might have consisted of some 900 people. All were dependants of the *dunnu*. About half of them were unfree workers (*shiluhlu*) who worked as farmers, received rations and had some land to cultivate for their own use. The other half consisted of freeborn but dependent farmers, all of them Assyrian, with land to cultivate. He estimates that about sixty people lived and worked inside the *dunnu*, including the administrative and domestic staff. Among the artisans working at the site were potters, brewers, oil-pressers, builders, leather workers, bakers, perfume makers, chariot makers, hair dressers, singers, dress makers, a smith and merchants. All of these, according to the texts, were dependent on the *dunnu* administration. Some were *shiluhlu* workers, while some received rations or may have had fields to provide for extra income. All produce seems to be directed at the *dunnu* itself, the household of the grand-vizier or the state. While being aware of the fact that the *dunnu* administration *by definition* would only record the goings-on of its own dependants, it is notable that the texts do not mention free, independent craftsmen working at the *dunnu* and producing for a general market. Especially since the evidence for pottery production was excavated within the confines of the *dunnu* itself, the attachment to the *dunnu* administration seems to have been strong. The potter almost certainly worked under complete authority of the *dunnu*, just like the other craftsmen. It is very likely he or members of his family also participated in agriculture, to increase the family income (Wiggermann 2000). There is no indication in the texts for the sale or exchange of vessels on a market, or any other destination outside the *dunnu* administration. The size of the production remains unknown, but if every *dunnu* was self-sufficient in its pottery production and Sabi Abyad was only producing for its own dependants and packaging needs, the consumer group is not extremely large.

Conclusions

From the above it can be concluded that pottery was locally produced at Sabi Abyad, that this produce was directed mainly at the *dunnu* population, and that the workshop was located within the area under administration of the estate. As to the kind of production, we have seen that at least in one case the potter was male. It is probable that he did not work alone but had several assistants, as is suggested by the forming techniques used to make the pottery. The potters were professionals, in shaping, kiln building and firing. Efficient techniques were directed at quick, serial production and at functional rather than decorative shapes. Timesaving seems to have been a major factor. Most of the produce is of a

standardised kind, both in shape and in size. This is probably in part related to the efficient and quick production.

The size of the workshop and kilns that were excavated, as well as the estimated consumer group, suggest a production of small to middle scale. Of course, other facilities may still be found outside the *dunnu* walls or may have been located at other sites. Production was possibly fairly intense: the potter could have worked full-time or year-round. It is, however, expected that pottery production did not fully provide for the whole family income.

Pottery production at Sabi Abyad seems to have been organised in an individual workshop that was largely dependent on the *dunnu* estate administration. The major reasons for the *dunnu* to organise its own production would have been the lack of enough local products in an area that was only sparsely inhabited before the establishment of the Assyrian estates, the low production costs, and the availability of producers whenever the need for more vessels arose.

Occasionally, the *dunnu* potters may have spent time on decorated vessels, special shapes and large handmade vats. Also, pottery might have been produced at other locations within the territory of the *dunnu*, by individual workshops yielding more variable produce, possibly even in another ethnic or stylistic tradition. Finally, a small amount of the excavated pottery probably was imported or reached the site by means of trade or exchange. If there was any household production of pottery in the area, its output would have been very small and most probably its products did not reach Sabi Abyad.

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The “Black Top Pottery” from the Gaziantep Region: Pottery Distribution and the Expansion of the Akkadian Empire

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Abstract

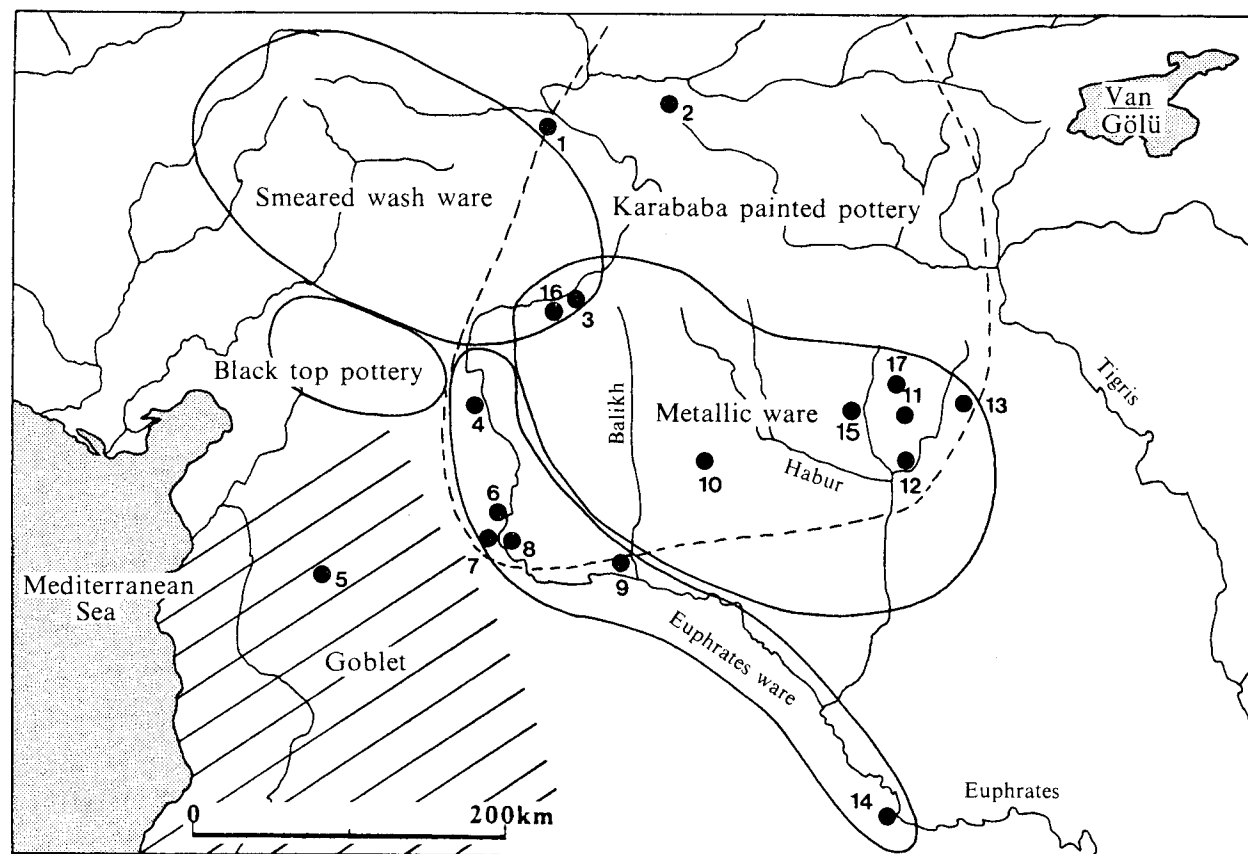
Our report is about so called “Black top pottery” (not Egyptian black top pottery) collected from around the Gaziantep region (southeastern Anatolia). Despite having researched various excavation reports, a report about this “Black top pottery” can not be found. According to pottery types, we can assume they belong to the latter part of the 3rd Millennium B.C. Then, within this pottery distribution zone, the Gaziantep region seems to be the main zone. The pottery zone has a close relationship with city territory. Furthermore the territory serves as the economic base. During this period, big cities such as Ebla, Tuttul and Tell Brak begin to appear around the dry farming zone in northern Syria. Even today, Gaziantep is famous as a place for the production of pistachio. Urbanization of southeastern Anatolia and northern Syria are due to the political control of Akkadian empire. On the other hand Akkadian monistic control did not exist in this region. Instead, it has been shown that there were many adjoining cities to the region. Finally, we want to try to examine it about the reason why “Black top pottery” can be found in the Gaziantep region.

Introduction

I would like to discuss the “Black top pottery” from the Gaziantep region and the pottery distribution and expansion of the Akkadian empire. This report does not concern the Egyptian black top pottery, but the so-called “Black top pottery” from surface collections in the Gaziantep region. Sherds of this pottery are kept in the Gaziantep Archeological Museum, and I deeply thank the staff of the the Museum, especially Mr. Rifat Ergeç, director, and Ms. Fatma Bulgan, deputy director, for their cooperation during my studies. Furthermore I would like to thank Prof. Dr. Tahsin Ozguc and Prof. Dr. Kutlu Emre for their precious advice.

The outline of the pottery

Until I made note of it, no mention of the “Black top pottery” (Fig. 2–5,8) had been made in any of the earlier excavation reports, and the kind of pottery which I have named “Black top” had not been recognized as unique or indigenous. In 1997 a group of pottery was discovered by the staff of the Gaziantep Archeological Museum at Kazikli. Kazikli is the northern part of Gaziantep in the Euphrates basin. It was on this site that “Black top pottery” was found. It appeared that the Gaziantep region was the main producing area of this type of pottery.



1. Arslantepe 2. Norşuntepe 3. Lidar Höyük 4. Carchemish 5. Ebla
 6. Tell Hadidi 7. Habuba Kabira 8. Tawi 9. Tuttul 10. Tell Chuera
 11. Tell Chagar Bazar 12. Tell Brak 13. Tell Leilan 14. Mari
 15. Tell Beydar 16. Kurban Höyük 17. Tell Mozan

FIGURE 1. Pottery distribution zone in southeastern Anatolia and northern Syria.

I have assumed that the “Black top pottery” was made in the latter part of the 3rd Millennium B.C. Although similarities in form are observed with the pottery of northern Syrian types, surface colors of the “Black top pottery” are quite different. The upper part is black, while the middle and lower parts are orange. Not painted, the black was attained through an oxidation reduction technique.

During the latter part of the 3rd Millennium B.C., not only the “Black top pottery” but also other kinds of pottery appeared throughout southeastern Anatolia and northern Syria (Fig. 1). Smeared wash ware (Fig. 2-1) has been found around southeastern Anatolia. Goblet has been found around the northwestern Syria. Euphrates ware (Fig. 2-3) has been found along the Euphrates basin. Metallic ware and Karababa painted ware (Fig. 2-2) have been found around northeastern Syria and eastern Anatolia respectively. Each ware represented a distinct cultural sphere (Fig. 1).

Now let us take a close look at each pot: a pot with pedestal base made of bronze excavated from Tell Chuera (Fig. 2-4), a Syrian bottle (Figs. 2-6, 7, 8), and a beaker (Fig. 2-9). They all look alike. The pot with pedestal base was dominant in northern Syria but it has been found distributed throughout a wide area of Anatolia, Syria and Mesopotamia. I believe it was due to the wide-spread trade at the time. The Syrian bottle is dominant in

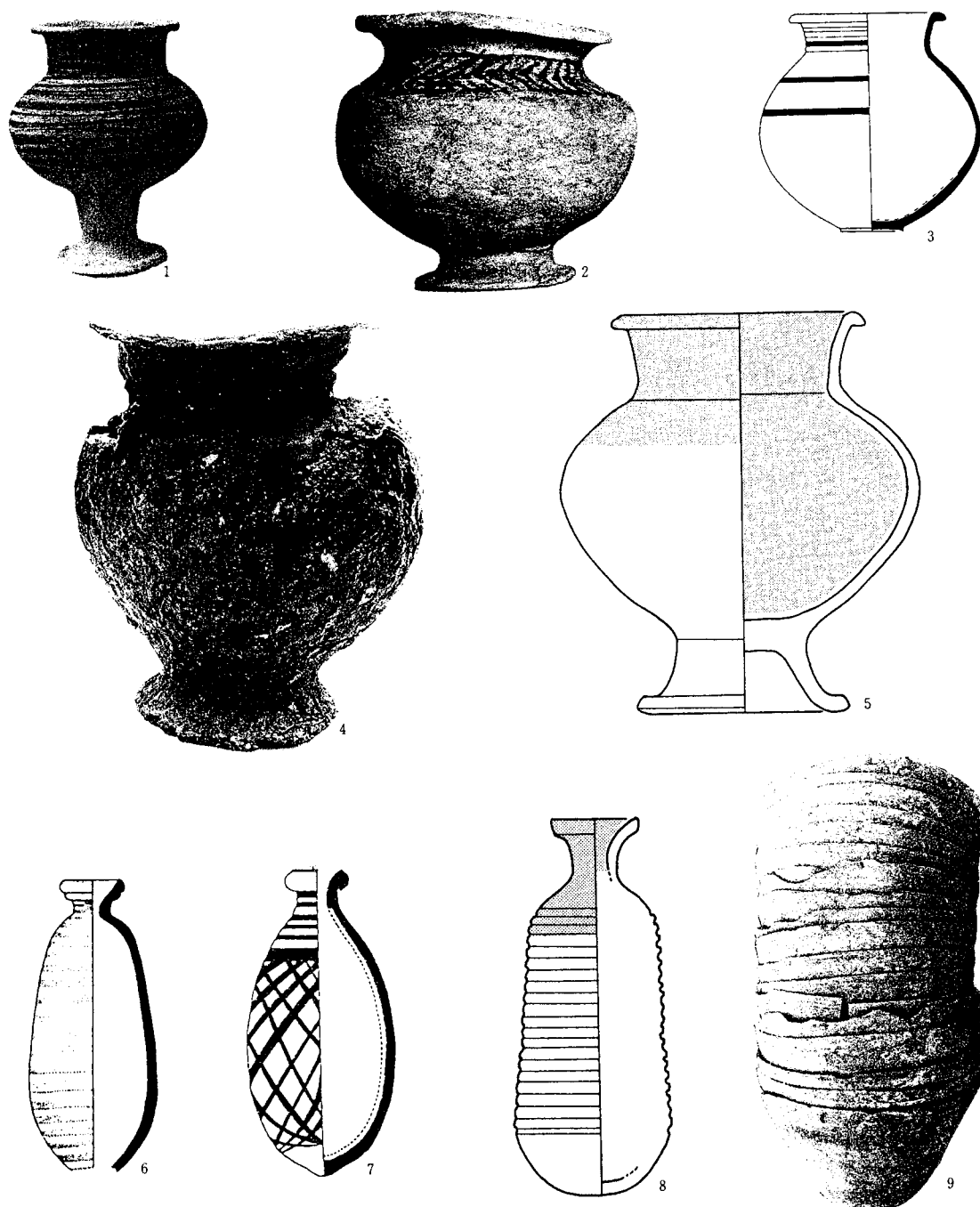


FIGURE 2. Potter from southeastern Anatolia and northern Syria.

1. Smeared wash ware: Lidar Höyük (Hauptmann 1983: Resim 12).
2. Karababa painted pottery: Lidar Höyük (Hauptmann 1983: Resim 13).
3. Euphrates ware (Kampshule/Orthmann 1984: Taf. 33-10).
4. Bronze vase (Kühne 1976: Taf. 5).
5. Black top pottery: Gaziantep region (Gaziantep archaeological museum).
6. (Wilkinson 1990: Pl. 133-1).
7. (al-Maqdissi 1993: Fig. 4-3).
8. Black top pottery (Gaziantep archaeological museum).
9. Mass production pottery (Weiss 1993a: 43).

northern Syria. The beaker type, which is also widely distributed, has a markedly unique form (Fig. 2–9). It has been assumed that this type of pottery was mass-produced.

Akkadian Expansion

Well, what could be the factor that had created the similarities even uniformity, in some cases among various pottery types? It may be pointed out that the invasion of the Akkadian empire into the northern area had caused it. The surviving written documents indicate that close relationships existed between Anatolia, Syria, and the Akkadian empire.

- (1) Akkadian merchants staying in the city of Purushhanda requested military aid from Sargon, the king of Akkad.
- (2) In his expedition to Anatolia, Naram-Sin, king of Akkad, fought with the 17 kings of Anatolia who had united against him. It has been recorded that the kings of Hatti and Kanish were among them.
- (3) The presence of the stele of Naram-sin in the Pir Huseyin inscription verifies this event.
- (4) According to the written documents of Ebla, there are two accounts of the collapse of Ebla: one states that Sargon was responsible for it and the other that Naram-Sin was.

The mineral resources and grain production of the northern area, i.e., southeastern Anatolia and northern Syria were bountiful, so it must have been lucrative for the Akkadian empire to control them.

According to the Lagash documents, the amount of the cereal harvest was 2500 l/ha in about 2400 B.C. (Early Dynasty Period). However, the amount of cereal harvest was 1460 l/ha in about 2100 B.C. (Ur third Dynasty). Furthermore, the amount of cereal harvest was 900 l/ha in about 1700 B.C. The decline of the cereal production capacity in south Mesopotamia is supposed to have left substantial political and economic impact on the Akkadian empire.

The meaning of the pottery distribution zones

It may be pointed out that the formation of the pottery zones was closely related to the extent of the city territory. During this period, big cities such as Ebla, Tuttul and Tell Brak begin to appear around the dry farming zone in Northern Syria (Fig. 3). The city territory served as the economic base of the dry farming zones. I want to suggest that city territory of the dry farming zone should be thought of not only in terms of production capacity, but in terms of the farming system as a whole. I believe we can extract the ideal shape of the city territory in the dry farming zone this way.

According to Ebla documents, there is evidence that much livestock (especially sheep) was kept around Ebla. According to the Ebla documents, the most important material exported from Ebla was wool and textiles. Around Ebla there were the livestock and fruit tree (olive and grape) cultivation zone. Northeastern Syria is a very eminent granary today. However, we may assume that having much livestock was a necessity in the dry farming zone. Without the excrement of livestock, the soil could only get nutrients from normal rainfall. And biennial cultivation was necessary. The excrement of livestock was an important manure used in the cultivating of the fields. Livestock was necessary for maintenance of

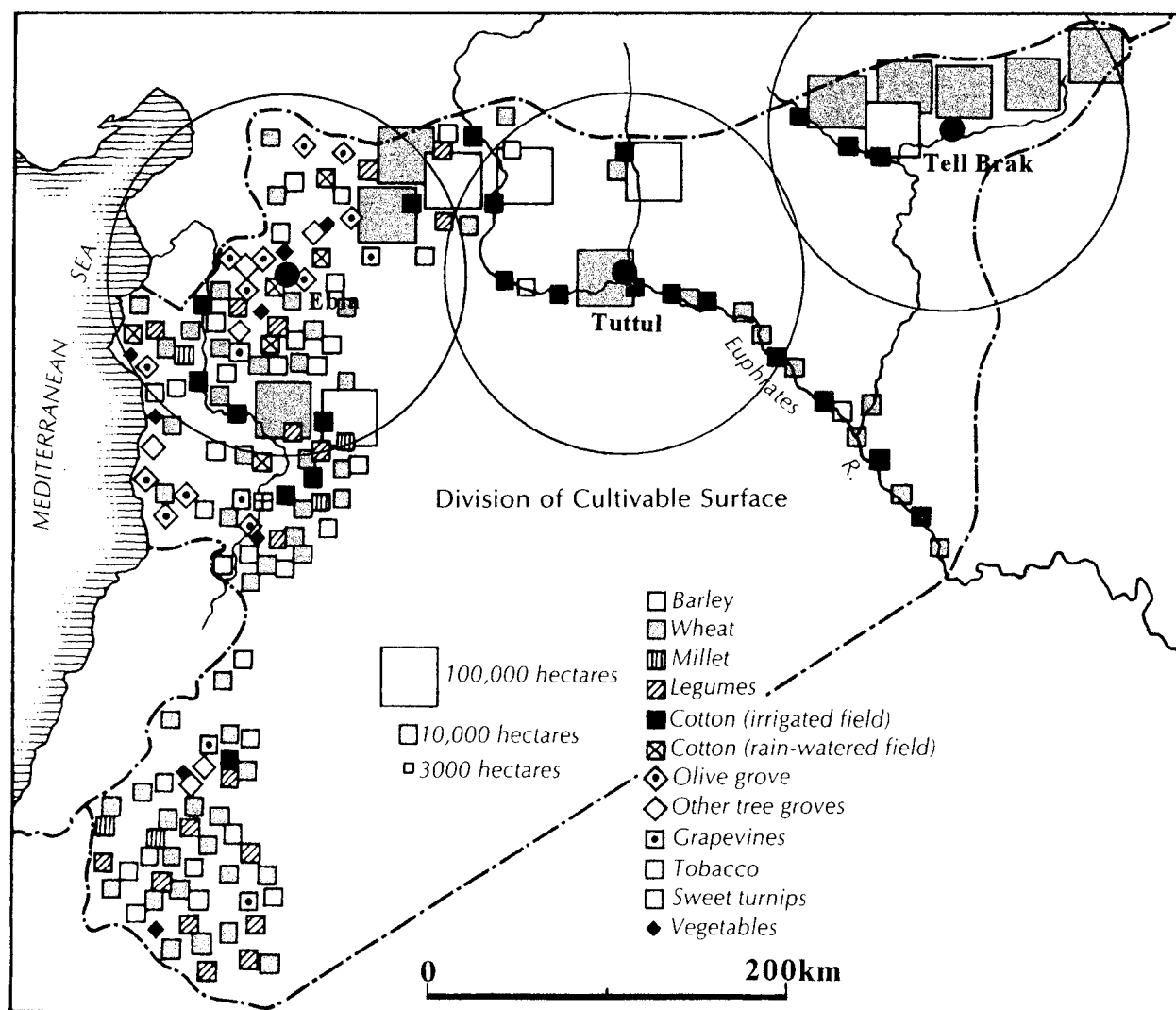


FIGURE 3. Modern grain production and city territories (based on Wirth 1971: Karte 9, Kontani 2000: Fig. 4).

the arable land in the dry farming zone. In that situation, it was imperative to secure a vast cultivation area.

The city territory

The estimation of the territory for each city was done in the following way. First, I estimated the maximum area in such a way that they did not overlap with one another. I assumed that the distribution of one pottery zone would correspond to one city area. What I found was a territory which was a circle ca. 100 km in radius. At the center of each pottery distribution zone existed a main city. For example, the center of the distribution of the Goblet is supposed to have been the Ebla territory, that of metallic ware is the Tell Brak territory, that of Euphrates ware is the Tuttul territory (Fig. 3). Akkadian control presumably did not extend into the entire region. Instead, I argue that there were many adjoining cities in the region.

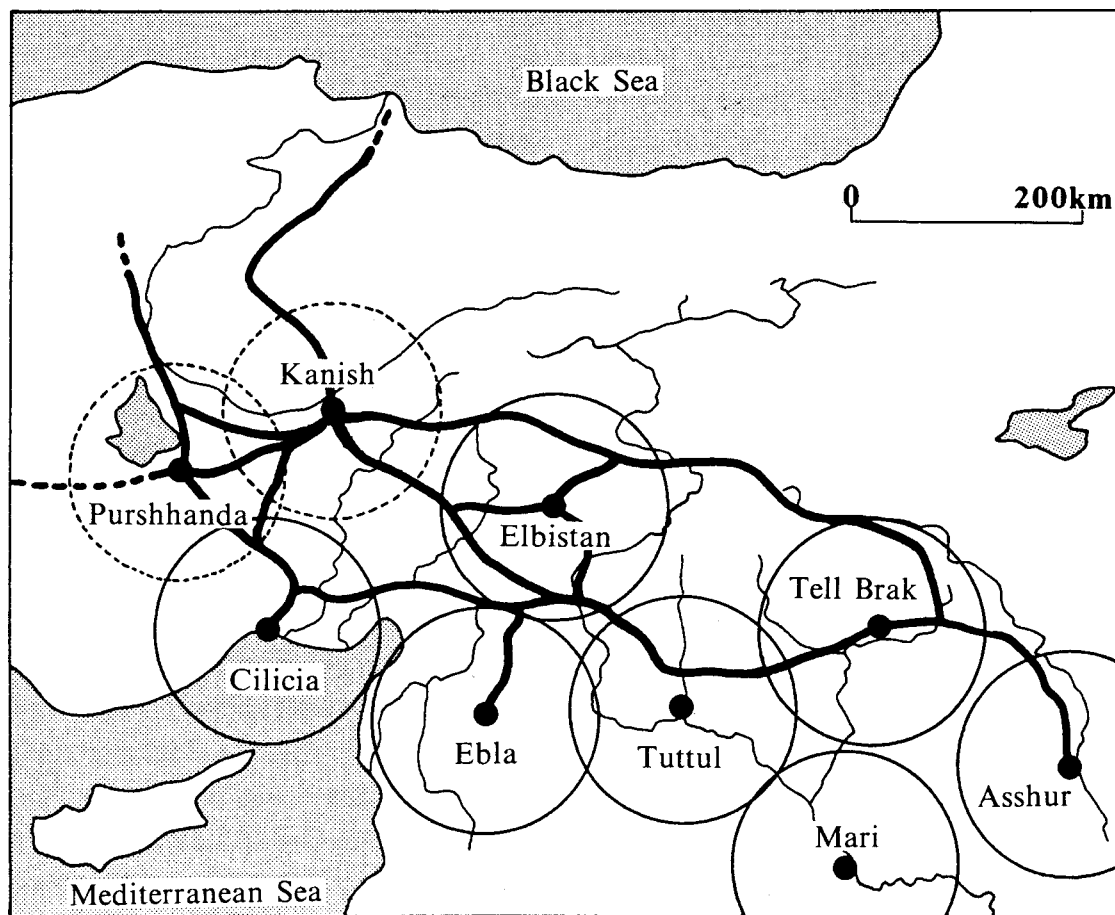


FIGURE 4. 200 km bloc of each city territory.

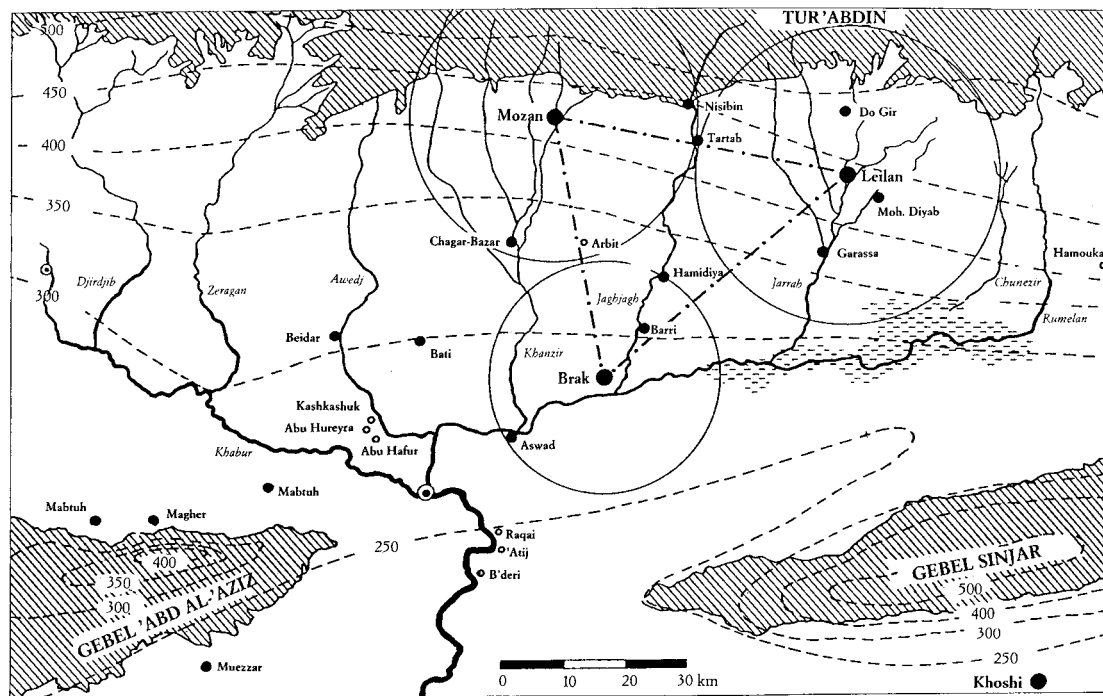


FIGURE 5. The city territories of Habur triangle (Weiss 1993b: Fig. 2).

In calculating the territory of each city according to the Ebla documents and the modern farming production capacity, the radius becomes 100 km as well. Also a city territory can be calculated from caravan routes. For example, in the first half of the 2nd Millennium B.C., the Assyrian colonial period, the distance between Kanish and Assur was about 1000 km. It took about six weeks to travel between the two cities according to the Cappadocian texts. If we suppose that a rest was taken in each city, as well as a change of donkeys, then approximately 200 km could be covered in 10 days. So a total of 50 days was needed. The caravan route was divided by 5 territories (Fig. 4). According to ethnological data, 20 km is the average distance travelled in one day by the Yuruk through the summer and winter camps on the Anatolian plateau.

Now, I would like to pose two final questions: how large would a city territory have been, and what would be the size of the population that it supported? The Ebla documents state that the population in those days was about 260,000 people. This number probably included the people living in an around Ebla. It is estimated that 3 ha were needed to support one person in the dry farming zone (data of modern Syria and Iraq). The arable land of a radius of 50km becomes necessary at least to support the 260,000 people supposing 100% land use. This shows that at least 25% of each territory in a radius of 100 km must be changed into farming land (Fig. 6). Reference data comes from Prof. Dr. H. Weiss's report about the territory of northeastern Syria, the Habur triangle area (Tell Mozan, Tell Leilan, Tell Brak) (Fig. 5). The estimated population there was about 170,000 people. Farming land within a radius of 40 km would be needed to support 170,000 people. If the territories of Tell Beydar and Tell Chuera (combined population 90,000 people) are added to this, it would become the approximate area of Ebla (Fig. 6). This city territory corresponds with the distribution zone of one of the above mentioned pottery types.

My conclusion is that a city territory in the dry farming zone, such as southeastern Anatolia or northern Syria, had a radius of 100 km. We need to understand the distribution of the “Black top pottery” in such a context.

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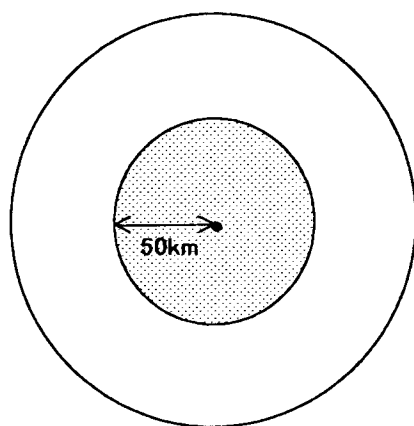
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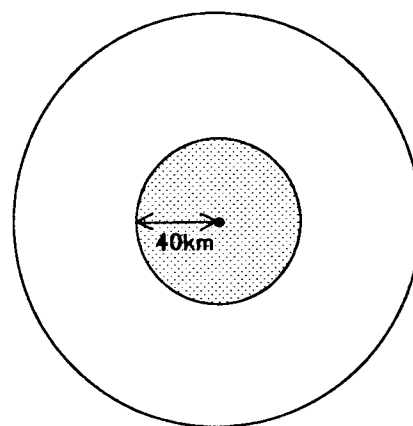
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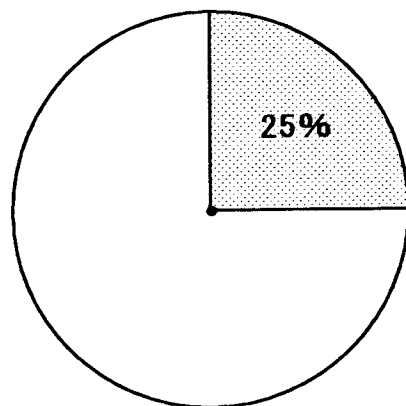
The arable land of a radius
50km is in need 100%



The arable land of a radius
40km is in need 100%



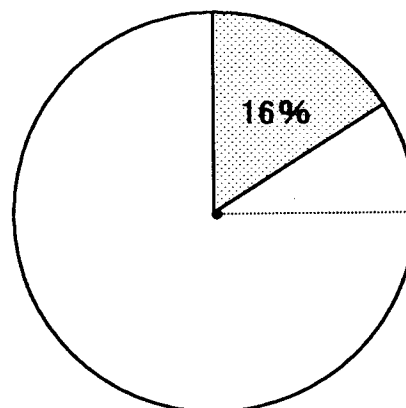
25% of the territories
in a radius of 100km



260,000 people

Ebla

16% of the territories
in a radius of 100km



170,000 people

Habur triangle area

FIGURE 6. The land use of Ebla and Habur triangle.

Vorläufiger Bericht über die römisch-kaiserzeitlichen und spätantiken Tonöllampen aus Seleukeia Sidera in Pisidien (Südwesttürkei)*

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Köln

Abstract

During the excavation campaign in 1993 at Seleuceia Sidera, an ancient Pisidian city, a group of terracotta oil lamps were found. The most closely related collection of these lamps from both the geographical and the typological point of view, comes from Sagalassos, a neighbouring city, approximately 60 km southeast of Seleuceia. They were produced there, are numerous and show that in oil lamps as well as fine and coarse wares, terracotta figurines, terracotta unguentaria and building materials the two cities had much common. We do not know whether some of these oil lamps found at Seleuceia Sidera were produced in Seleuceia Sidera locally. Just what the percentage of imported Sagalassos oil lamps was during the Roman period is difficult to estimate and there is no evidence to prove to what extent Seleuceia Sidera played the role of importer.

The oil lamps, of which several fragments occur in most of the trenches in Seleuceia Sidera fall into two main groups: wheel-made and mould-made. The wheel-made specimens have normally a typical fine structure of Fabric 1. The mould-made oil lamps are numerous, both decorated and plain. The most common ones have a pebbled surface, ribbed pattern, or vine scrolls. The plain lamps are both round with short spouts and slightly narrower with more elongated spouts.

Characteristically these lamps do not appear in Seleuceia Sidera before the second century A.D.; they continue in use into the fifth century A.D. those found in Seleuceia Sidera suggest, that Sagalassos terracotta oil lamp makers had a good market for

*. Der folgende kurze Auszug ist ein kleiner Teil meiner bisher unpublizierten, ursprünglich auf türkisch geschriebenen Diplomarbeit, "Die Keramikfunde aus den Grabungen in Seleuekia Sidera in Pisidien (Südwesttürkei) im Jahre 1993", die ich während des Wintersemesters 1995/1996 im Seminar für Klassische Archäologie der Universität Ankara (Türkei) angefertigt habe. Zur Zusammenfassung meiner Diplomarbeit: Laflı 1999b. Dieser Auszug wurde am 24. September 1998 in Göteborg (Schweden) an der 4th Annual Meeting of the European Association of Archaeologists vom Autor als Poster präsentiert. Für diese Präsentation und eine kurze Zusammenfassung dieses Aufsatzes im englischen: Laflı 1998: 177. Für die Aufnahme dieses Artikels im Kopenhager-Kongreß sowie in seiner Endpublikation bin ich Herrn Ingolf Thuesen zu Dank verpflichtet. Diese Manuskript wurde am 26. Mai 2000 abgeschlossen, somit konnten die späteren Entwicklungen im Bereich der römisch-kaiserzeitlichen und spätantiken Tonöllampen sowie sagalassische Keramikproduktionen hierbei nicht mehr berücksichtigt werden.

their products through Pisidia. Since there are a few published lamp collections from other excavations in southern Asia Minor, the categories will be useful indices of the lamp industry in this region.

Seleukeia Sid_ıa¹ ist eine antike nordpisidische Stadt, die sich ca. 1.5 km nordnordöstlich des Dorfes Bayat und 18.5 km nordöstlich des Stadtzentrums von Isparta, in der Südwesttürkei befindet. Hier wurden bisher vier Grabungskampagnen durchgeführt: die ersten drei (Rettungs)kampagnen haben zwischen den Jahren 1985 und 1987 stattgefunden, und wurden von lokalen archäologischen Museum in Isparta mehrheitlich in dem Bereich des römisch-kaiserzeitlichen Theaters durchgeführt;² die vierte und die letzte Kampagne war im Jahre 1993, und wurde unter der Betreuung von O. Bingöl (Universität Ankara) mit der Zusammenarbeit mit dem lokalen archäologischen Museum von Isparta durchgeführt.³ Die Tonöllampen, die hier kurz beschrieben werden, stammen von dieser letzten Grabungskampagnen im Jahre 1993, bei der die erste systematische Keramikuntersuchung dieser antiken Stadt gemacht wurde.

Die hauptsächlichen Ausgrabungsorte dieser letzte Kampagne waren die Südterrasse II, auf der sich eine in den Fels gebaute Anlage befindet und die südlich davon gelegene Südterrasse I, auf der ein Rundbau liegt. Der Baukomplex des Rundbaus in der ersten Terrasse scheint eine religiöses Gebäude zu sein, das mindestens in der Spätantike bestand hatte und indem wir sehr viele Reliefwaren sowie Terrakotta-Figurinen entdeckt haben. In dem zweiten Hang des Hügels wurden auch einige (ca. neun nebeneinander liegende) Räume ausgegraben, die von Wohn- und Arbeitsgebäuden beherrscht worden sind. Außerdem sind die Nekropole, der Ostturm auf dem Gipfel des Hügels, die Ostterrasse (und die dortige Wohngebäude der spätantiken Zeit), das Theater und Zisterne als bedeutende Ausgrabungsbereiche zu nennen. Daß sich alle Wohn- und Arbeitssitze auf dem südlichen und östlichen Hängen der Stadt befinden, zeigt, daß in der Spätantike die Hänge der Stadt dicht besiedelt wurden. Die Grabung 1993 in Seleukeia Sid_ıa hatte von Anfang an die Tatsache zu berücksichtigen, daß über den früheren (hellenistisch-römisch-frühkaiserzeitlichen) Ruinen eine durchgehende spätantike-frühbyzantinische Überbauung lag bzw. die früheren Bauten durchgehend in den späteren Bauphasen benutzt wurden. Da die Stadt eine schwierige Stratigraphie aufweist, konnte auf der Grundlage des Fundmaterials geringere Synthese in der Richtung von Datierung geschaffen werden. Wegen der Natur des Geländes und der allgemeinen archäologischen Gegebenheiten ist es in jedem Bereich ebenfalls kaum möglich, die archäologischen Funde stratigraphisch-chronologisch zu ordnen.

Die hier behandelten Tonöllampen stammen meistens aus den spätantiken Bauphasen und aus Auffüllungen, die insbesondere in der Südterrasse sich befinden. In diesem Bereich sind wir aber leider auf keine geschlossenen Fundgruppen gekommen. In der Nekropole, die im nordwestlichen Stadtteil liegt, haben wir auf dem Felsen eingravierte Sarkophage und Haus-Gräber entdeckt, in denen wir einige datierbare Fundkontexte von verschiedenen Materialgruppen (u. a. Tonunguentarien, Tonöllampen und Terrakotta-Figuren) entdeckt haben.

1. Zur Lage und Topographie, bisherige Forschungen, Geschichte, Monumenten sowie Prospektionen-Ausgrabungen 1993 im pisidischen Seleukeia Sid_ıa und seiner Umgebung (u. a.): Laflı 1999b: 59–62; und Laflı im Druck. Dort ist auch die entsprechende Karte mit der Lage und Topographie der Stadt einsehbar.
2. Zu den (Rettungs)Grabungen in Seleukeia (mehrheitlich über das Theater) Kaya 1999.
3. Zu dieser vierten und letzten Kampagne in Seleukeia: Laflı im Druck.

Bei dieser Grabungskampagne war eines der wichtigsten Ergebnisse ohne Zweifel das Keramikmaterial, vor allem in pisidische Nachbarnstadt Sagalassos produzierte regionale Keramik, (u. a. feines Tischgeschirr, grobe Waren, Reliefwaren, Tonöllampen, Tonunguentarien, Terrakotta-Figurinen und Tonbaumaterial) von der wir in Seleukeia 1993 mehr als 4000 Stücke gesammelt haben.⁴ Die regionale Keramikproduktion vom antiken Sagalassos, die sogenannte "Sagalassos red slip ware" ist seit der Entdeckung des Töpferviertel an den Osthängen von Sagalassos durch ein belgisches Team im Jahre 1987, bekannt. In dem Zeitraum zwischen der römischen-Frühkaiserzeit (möglicherweise auch noch früher) bis in die frühbyzantinische Periode hat man in den Werkstätten von Sagalassos sehr intensiv diverse Produktionsverfahren in keramischen Betrieben durchgeführt.⁵ Die Tatsache wurde mehrfacher dokumentiert, daß das in Seleukeia Sid_ra in den 1993-Grabungen gefundene kaiserzeitlich-römische und spätantike Keramikmaterial in einer extremen Dimension (mehr als 95%) aus Sagalassos importiert wurde.⁶

Die Produktion von Tonöllampen als Massenartikel in der sagalassischen Werkstatt ist seit dem Jahr 1993 bekannt; sie sind jedoch eines der geringsten erforschten Bereiche von sagalassischer Keramik. Die zwei hauptsächlichen Gruppen sind auf der Scheibe getöpferte und verzierungsfreie sowie aus Modeln gefertigte Tonöllampen. Insbesondere hatten diese sagalassischen auf der Scheibe getöpferten Tonöllampen die Metalformen bzw. wahrscheinlich frühere, hellenistische Formen nachgeahmt. Dies kann insbesondere bei der Form mit dem Fuß (Tafel III, Fig. 1a-b) (die unten dargestellt wird) beobachtet werden. Bisher liegen zwei vorläufige Berichte von dem Jahrgang 1993 über die Tonöllampenfunde und -produktion von Sagalassos vor: Die aus Modeln gefertigten Tonöllampen (sowie einige auf der Scheibe getöpferte Lampen) der Kampagnen 1989 bis 1991 sind von I. Roovers und auf der Scheibe getöpferten Tonöllampen der Kampagnen 1990 bis 1992 von Erika Scheltens untersucht und publiziert worden.⁷ Diese Publikationen berichten jedoch von manchen bestimmten Grabungsbereichen (Sites F, I, DT und N), und die typologische Klassifikation basiert hauptsächlich auf den Funden aus F und D im Töpferviertel. Später wurden noch weitere (aber sehr wenige) Tonöllampenfunde von Sagalassos berichtet.⁸ Bisher sind jedoch keine Endergebnisse über diese Produktion erschienen.⁹ Die bisherige Forschungen hat ergeben, daß bei den in Sagalassos gefundenen Tonöllampen der Ton der gleiche ist wie die Sagalassos red slip ware. Dort wurden ebenfalls die Gußformen für die Tonlampen gefunden. Der Ton der für die Gußformen benutzt wurde, weist den gleichen Toncharakter wie die Terrakotta-Statuetten und -Figurinen auf. Bei beiden Formen gibt es eine begrenzte Zahl von typologischen Variationen. Die Anfang der Herstellung soll im 1. Jh. n. Chr. liegen; es ist bis in das 4. und 5. Jh. weitergegangen. Die aus Modeln gefertigten Tonöllampen stammen jedoch erst aus der Zeit ab dem 3. Jh. n. Chr.¹⁰

4. Laffi 1999b.

5. Poblome 1999: 273.

6. Laffi 1999b; und Laffi 2000.

7. Roovers 1993 und Scheltens 1993. Im zweiten Bericht wurde versucht, die Chronologie-, Inventar- und Beschreibungsfehler des ersten Berichts vom gleichem Jahr zu korrigieren.

8. Waelkens et al. 1991: Pl. XL (d) (eine aus Modeln gefertigte, aus dem 4. Jh. n. Chr. stammende Lampe, wurde 1990 in der Nähe einer spätantiken Grab gefunden); und Waelkens et al. 1995: 69, Fig. 12 [eine auf der Scheibe getöpferte Lampe vom Typ 1 Lw110 vom "the peristyle (?) building"].

9. Ein letzter Überblick zu diesem Thema (jedoch zu kurz): Poblome 1999: 273.

10. Ebd.

Außer aus Sagalassos wurden bisher in Pisidien sehr wenige Tonöllampen publiziert, deshalb sind wir bei der Lampenproduktion, -nutzung, -verbreitung usw. außer bei Sagalassos und pisidischen Seleukeia ahnungslos. Bei den Rettungsausgrabungen der Nekropole von Kibyra wurde neben aus Modeln gefertigte Tonöllampen auch eine auf der Scheibe getöpferte Tonöllampe (mit großer Wahrscheinlichkeit aus Sagalassos) entdeckt.¹¹ Ob es in Kibyra auch eine aus den Modeln gefertigte Tonöllampenwerkstatt gegeben hat, ist bisher noch nicht untersucht worden. Die sonstigen Ausgrabungen und Surveys (u. a. Antiocheia, Hacımusalar, Kremna, Surveys von M. Özsait usw.) sowie lokale archäologische Museen (Isparta, Burdur und Yalvaç) und ihre Tonöllampenbestände sind bisher noch nicht publiziert. Bisher habe ich in den Publikationen, bei denen über sagalassische Keramik berichtet wurde, kein einziges Stück einer sagalassischen Tonöllampe gesehen. Es gibt jedoch eine bisher unpulizierte sagalassische Tonöllampe in der Studiensammlung vom archäologischen Seminar der Universität Ankara, die zufällig 1980er in Side gefunden wurde.

Die seleukische Tonöllampen kann man je nach ihre Herstellungstechnik in zwei Teilen untersuchen: auf der Scheibe getöpferte und aus Modeln gefertigte Tonöllampen. Die chronologische Einordnung dieser zwei Haupteinheiten (in welchen Perioden war welche Typ noch vorhanden) und ihr Vorkommen (welche ist noch häufiger) wurden hierbei nur stellenweise und geringfügig berücksichtigt, da die Grabungen nur in einigen begrenzten Teilen der Stadt durchgeführt wurden und nicht vollständig beendet sind. Es konnte leider in Seleukeia nicht überall beobachtet werden, in welchen Bereichen welche Typen in welchen Perioden am häufigsten auftauchen.

In Seleukeia wurden in den 1993-Grabungen lediglich ca. 15 (fast) vollständig komplette Tonöllampen gefunden (nur zwei davon sind aus Modeln gefertigt). Die sonstigen, ungefähr 150 Tonöllampen, waren fragmentarisch erhalten. Davon wurden insgesamt 47 Stücke untersucht. 17 von diesen 47 waren auf der Scheibe getöpferte und 30 aus Modeln gefertigten Tonöllampen. Die größte Fundkontingent gehört an Südterrasse (31 Stücke); 13 Stücke stammen aus der Nekropole; zwei Stücke kamen aus dem Osttor und eines aus dem Theater (Tafel IV, Fig. 4). Die hier dargestellten bzw. illustrierten 23 Beispiele repräsentieren also nur einem geringeren Teil unserer Tonöllampen-Sammlung, und zur Zeit befindet sie sich größtenteils im lokalen archäologischen Museum von Isparta. Ich habe jedoch die aussagekräftigsten Beispiele ausgewählt, damit in einem ersten Überblick gesehen werden kann, was für Typen mit welchen chronologischen Kriterien vertreten sind.

Die meist gebrochenen Teile sind auf der Scheibe getöpferte und aus Modeln gefertigte Tonöllampen unterschiedlich; z. B. bei den aus Modeln gefertigten Lampen sind die horizontalen Brüche in der Mitte der Öllampen sehr häufig. Als Brennstoff verwendete man eine Flüssigkeit (Lampenöl) von einheimischen Pflanzen, zum Beispiel von Oliven, deren Spur an der Schnauze gesehen werden kann. Aber bei den Öllampen aus Seleukeia weisen nicht alle Lampen eine Brandspur an ihre Schnauze auf, d. h. manche sind unbenutzt geblieben.

Über den Ton konnten einige Ergebnisse teilweise durch Beobachtungen, die ohne instrumentelle Hilfe möglich waren, erzielt werden. Bei den auf der Scheibe getöpferten Tonöllampenfunden aus Seleukeia Sidra handelt es sich um einen reinen Ton fast ohne sichtbare Unreinheiten, der sich von Tonarten der Sagalassos red slip ware, die bei den antiken Nachbarstadt Sagalassos gefundenen auf der Scheibe getöpferten Tonöllampen auch beobachtet wurde, nicht auftreten. Sie sind gewöhnlich von guter bis sehr guter und feiner Qualität von

11. Baer 1992: 283.

sagalassischem *Fabric 1*.¹² Die Tonfarbe der auf der Scheibe getöpften Tonöllampen haben meistens einen hellen, ziegelroten Tonfarbton rot 2.5 YR 5/8 (nach Munsell-Katalog). Der rote Überzug variiert von 7.5 YR 7/4 rosa bis 7.5 YR 7/6 rötliches Gelb und ist meistens gut erhalten (nach Munsell-Katalog). Oft zeigen die Hauptflächen einen einheitlichen Überzug und nicht sehr viel Farbunterschied. Dabei ist hervorzuheben, daß die gleiche Ton- und Oberflächenbehandlungscharakteristika bei den meisten (mehr als 95%), bei der auf der Scheibe getöpften Tonöllampen nachzuweisen ist. Damit kann man annehmen, daß wir ein einziges Produktionszentrum haben, wo diese, auf der Scheibe getöpften Tonöllampen hergestellt wurden. Die typologisch-morphologischen Ähnlichkeiten sowie auffallend selbe Ton- und Farbgattungen beweisen deutlich, daß diese Gruppe von Tonöllampen zweifellos in Sagalassos produziert sind. Deshalb basiert die Klassifikation hier aufgeführter Funde mehrheitlich auf den Studien der Tonöllampen, die in Sagalassos gefunden wurden. Dabei wurden jedoch keine sagalassischen gestempelten Beispiele gefunden.

Mit manchen Unregelmäßigkeiten und einer sorglosen Anfertigung weisen die sagalassischen auf der Scheibe getöpften Tonöllampen, die in Seleukeia gefunden worden sind, einen zweitklassigen Charakter: die Hochmaße von jeder Seite stimmen nicht überein, die Lippe über der Einfüllöffnung wurde meistens in einer unregelmäßigen Form angefertigt. Der Übergang an der Einfüllöffnung ist schlampig gemacht worden. Die Lampenoberfläche zeigt eine schlechte Anfertigung. Die Henkel und/oder Tülle werden nicht in der richtigen Lage (in der Mittellinie) eingesetzt. Die Kanten des Körpers können an einer Seite steil, und in anderen Seiten abgerundet sein. Ein Überzug ist bei der an der Scheibe gefertigten Lampe immer vorhanden, aber seine Anfertigung ist nicht immer ordnungsgemäß gemacht.

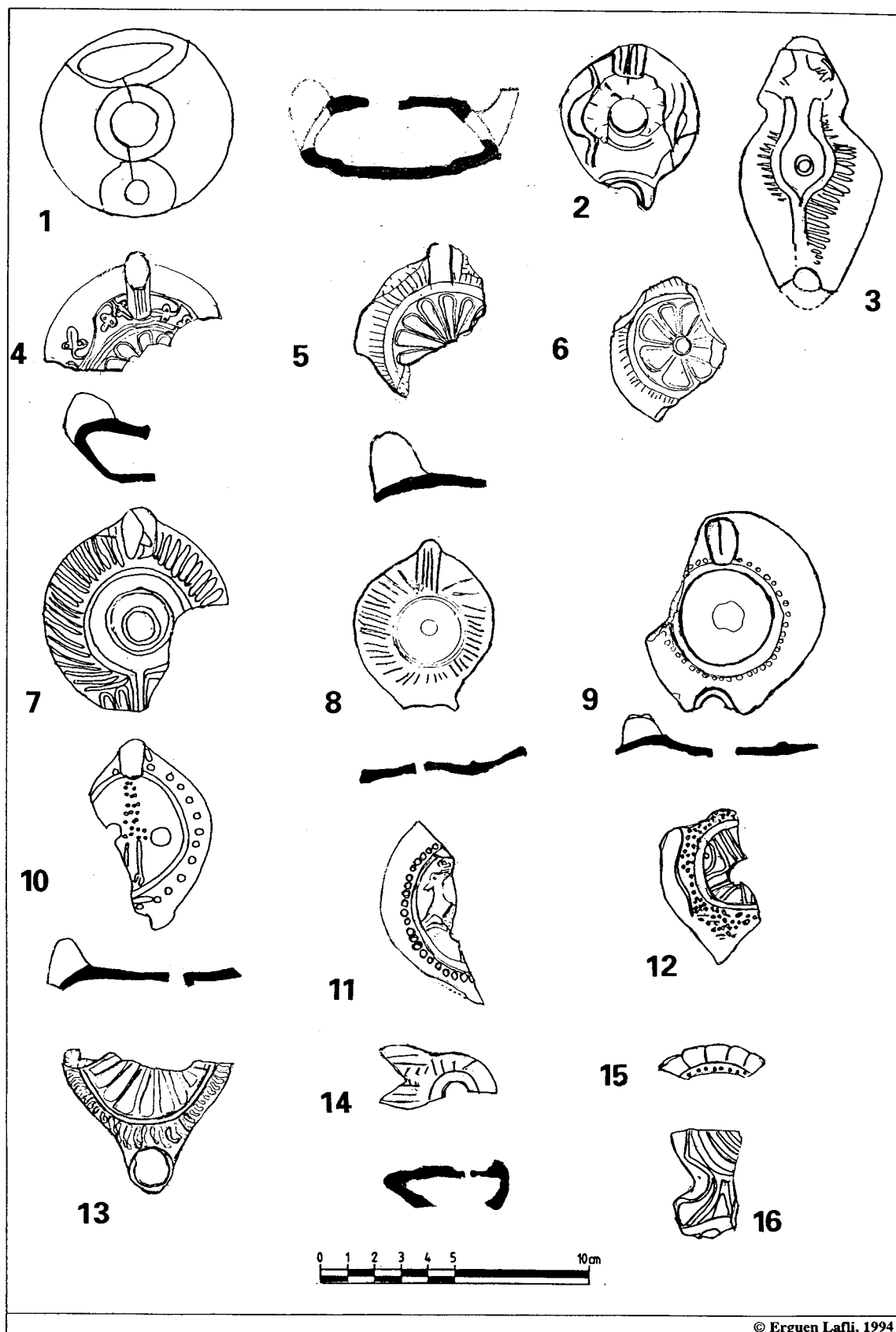
Bei den auf der Scheibe getöpften Tonöllampen aus Seleukeia handelt es sich je nach ihrer Typologie um zwei wichtige Hauptgruppen: dies sind 1 Lw 100 und 1 Lw 110. Diese beiden Gruppen sind verzierungslos. Beide haben einen zentralen und kleinen Diskus und einen konkaven Körper. Die Unterschiede zwischen diesen zwei Typen wurden in Sagalassos nicht deutlich getrennt. In Seleukeia wurden sehr häufig Stücke von der 1 Lw 110-Gruppe beobachtet, die unten dargestellt werden. Das einzige Beispiel, das eine morphologisch Parallele zu 1 Lw 100 sein könnte, wäre Beispiel 1, an der Tafel I; dieses Beispiel stammt aus dem undatierbaren Wohnräumen in der Südterrasse II.¹³ In Sagalassos wurden vier weitere Formen (1 Lw 120 bis 1 Lw 150) ebenfalls aus der Spätantike beschrieben. Diese Gruppen konnten wir in Seleukeia nicht identifizieren, da die Beschreibungen dieser Formen in Sagalassos nicht genug definitiv und präzise gemacht worden sind.

Von Seleukeia stammen fünf auf der Scheibe getöpften Tonöllampen (Tafel II–III) aus dem mit Münzen datierbaren geschlossenen Fundkontexten, nämlich aus den Gräbern in der Nekropole.¹⁴ Dabei muß man jedoch beachten, daß, da viele Skeletten in den einzelnen

12. Die Fabrikbeschreibung der sagalassischen Tonöllampen wurden in beiden bisherigen Berichten vom Jahr 1993 sowie in der Endpublikation von Sagalassos red slip ware nur provisorisch und kurz durchgeführt. Zur genauen Beschreibung dieser Fabrik (jedoch lediglich bei dem Tafelgeschirr): Poblome et al. 1993: 114; und Poblome 1999: 27. In wiefern diese Fabrik mit den Tonfabrikeinheiten von sagalassischen Öllampen übereinstimmt, wissen wir zur Zeit noch nicht.

13. Die Parallelen aus Sagalassos sind folgende: Roovers 1993: 157, Fig. 109–110, und 158, Fig. 111a–d; und Scheltens 1993: 201, Fig. 1–2 und 5.

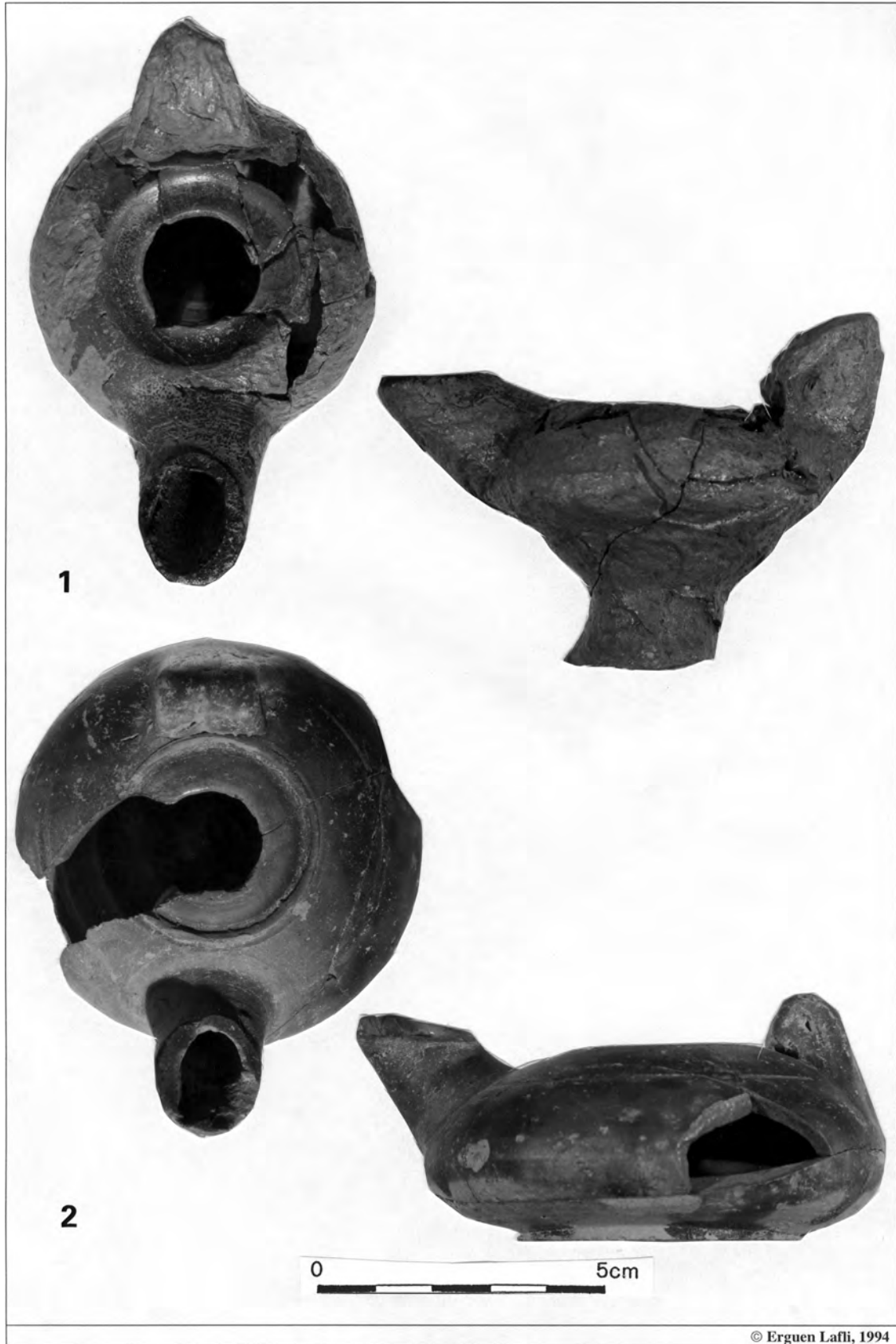
14. Die Nekropole von Seleukeia wurde in meinem Aufsatz detailliert beschrieben und illustriert: Laflin im Druck.



TAFEL 1.



TAFEL 2.



TAFEL 3.

Gräbern zusammengefunden wurden, diese Gräber von vielen nacheinander gekommenen Generationen zusammenbenutzt wurden. Deshalb müssen die Datierungen nicht das tatsächliche Produktions- bzw. Nutzungsdatum dieser Stücke reflektieren. Der morphologische Typus dieser fünf Beispiele sollte zumindest in einigen Stücken (sicherlich außer Tafel III, Fig. 1a–b) 1 Lw 110 sein.

Die erste datierbare Tonöllampe¹⁵ (Tafel II, Fig. 1a–b) stammt aus Felssarkophag Nr. 14. Bei diesem Grab wurden sechs Münzen gefunden, die zwischen den 251 und 337 n. Chr. datieren. Diese mit typologischem Charakter der sagalassischen 1 Lw 110 Lampe hat einen doppelkonischen Röhrenhenkel und hat Brandspuren auf seiner Schnauze. Es hat einen doppelt-konvexen Körper, dessen kugelige Form mit kleinem Diskus und langer Schnauze der gedrehten hellenistischen Diskuslampen entlehnt ist. Es ist eine flache doppelkonische Lampe mit scharfem Bauchknick, und konkavem Rand um das Fülloch sowie langer gerader Schnauze, oben gerade mit schwach ausgebildeten Ecken beiderseits des großen Brennlchs.¹⁶ Die Gemeinsamkeiten von 1 Lw 110–Lampen in Seleukeia sind folgende: sie haben flach gewölbte Ober- und Unterteile und einen kleinen, eingewölbten Diskus mit kleinem zentralem Fülloch und runder abfallender Schulter. Bei diesem Typus ist der Körper manchmal konisch, ohne eine richtige Trennung zwischen dem oberen und unteren Teil des Körpers. Der Füllochrand ist meistens sehr schmal und flach. Man kann manche diesem Typus angehörige Varianten als "Diskuslampe mit ausladender Bauchrundung und Schnauzenansatz" bezeichnen. Die in eigentlicher Höhe des Lampenkörpers ansetzende, nach vorne verfügte Schnauze ist kleiner und zugespitzt, aber manchmal tauchen ebenfalls zylindrische sowie (eher selten) quadratische Formen auf. Ihre Henkel sind meistens doppelkonische Röhrenhenkel mit zwei bis drei Rollen. Das Unterteil hat eine breite, leicht konkave Standfläche und einen manchmal konkav, manchmal konvex und manchmal flachen Boden. Selten taucht ein zylindrischer Henkel auf, der selbst größer als das Fülloch ist. Die Größe dieser Typen in Seleukeia variiert nicht sehr viel. Die Farbe und der Überzug bei diesen Waren variieren aber sehr, von Matt bis glänzend, die häufig gut erhalten geblieben sind.

Das zweite Beispiel (Tafel II, Fig. 2) (Inv.-Nr. NEK 100) stammt aus dem Felssarkophag-Nr. zwei. Vergleichend mit dem ersten Beispiel hat es einen sehr groben und tektonischen Charakter. Sein Überzug ist auch sehr matt. Ob es zum sagalassischen Typus 1 Lw 110 gehört, ist eine offene Frage.

Das dritte datierbare Beispiel (Tafel II, Fig. 3) besteht aus sieben Scherben. Es stammt ebenfalls aus dem Felssarkophag-Nr. zwei. Dieses Beispiel zeigt einen weiten und noch flacheren Körper als die anderen Tonöllampen.

Das vierte und auffälligste Beispiel (Tafel III, Fig. 1a–b) weist eine bisher unbekannte Form auf, die in sagalassischen Publikationen noch nicht aufgetaucht ist. Sein Fuß ist leider nicht komplett erhalten. Das zweite, dritte sowie vierte Beispiel stammen zusammen aus dem Felssarkophag-Nr. zwei in dem drei 3. Jh. Münzen sowie einen Tonkrug (als Beigabe) gefunden wurden, die von mir bisher publiziert wurde.¹⁷

15. Die Lampe wurde bisher von mir publiziert: Lafi 1999a.

16. Die Parallelen aus Sagalassos sind folgende: Roovers 1993: 159, Fig. 112, d; und Scheltens 1993: 202, Fig. 7–8, 10; 203, Fig. 12, 16, und 204, Fig. 20.

17. Lafi 2000: 45, Fig. 3, 17.

Das fünfte und letzte datierbare Beispiel (Tafel III, Fig. 2a-b) stammt aus dem Felssarkophag-Nr. sieben, in dem eine Münze aus dem Jahrgang 313 n. Chr. gefunden wurde. Diese Lampe besteht aus elf Scherben.

Es wurde in Sagalassos angenommen, daß die 1 Lw 100 in das 1.-2. Jh. und die 1 Lw 110 in das 3.-5. Jh. n. Chr. gehört. Das wurden aber noch nicht richtig bewiesen, da sie beide gemeinsam an der site F auftauchen. Der Typ 1 Lw 100 wurde in Sagalassos ab dem 2. und 3. Jh. datiert. Die 1 Lw 110 wird in Sagalassos zwischen dem 2. und 5. Jh. n. Chr. (spätantike/frühbyzantinisch) datiert.¹⁸ Die seleukeische datierbaren Tonöllampen in der Form von 1 Lw 110 weisen eine Datierung von 4. Jh. n. Chr. auf.

Die zweite Gruppe von Tonöllampen, nämlich aus Modeln gefertigte Lampen, wurden in ihrem Ober- und Unterteil aus je einer Matrize geformt, im nassen Zustand aufeinandergepreßt und die Naht verschmiert. Diese Lampen haben auch gewisse morphologische und dekorative Ähnlichkeiten mit den Lampen, die in Sagalassos gefunden wurden. Aber zur Zeit wissen wir offensichtlich zu wenig, um die Herkunft unserer aus Modeln gefertigten Tonöllampen zu schätzen, deren Ton noch nicht chemisch untersucht wurde.¹⁹ Ob die aus Modeln gefertigten Tonöllampen auch die gleiche Fabrik wie die auf der Scheibe getöpften Tonöllampen haben, ist zu diskutieren. In Seleukeia wurden keine zweiteiligen Gussformen für die aus Modeln gefertigten Tonöllampen gefunden (jedoch für die Terrakotta-Figurinen). Eine der wichtigsten Beobachtungen bei der aus Modeln gefertigten Tonöllampen ist, daß sie manchmal ebenfalls mit einem rot-schwarzen Überzug (bzw. mit einer aufgetragenen Engobe) überdeckt sind.

Auf der Oberseite der aus Modeln gefertigten Tonöllampen werden, meist radial um das Fülloch angeordnet, abstrakte und pflanzliche Ornamente angebracht. Die wichtigsten Verzierungselemente sind: Hirsch (Tafel I, Fig. 11), Hahn, andere Tiere, pflanzliche Ornamente, (u. a. Ranken mit Weinblättern, Efeu, zweiteiliger Myrtenkranz mit Früchten, Rosette mit Hüllblättchen usw.) Muscheln, (Tafel I, Fig. 4a-6 und 13) Steifen, (Tafel I, Fig. 3, 5-8; und Tafel IV, Fig. 1), Punktreihen (Tafel I, Fig. 9, 11-12; und Tafel IV, Fig. 2), Striche, Wellenlinien, Bogenreihen, Girlanden, Dreiecke, Rosetten, Kreuz (?), menschliche Darstellungen (Tafel IV, Fig. 3) und sonstige Motive.

In Sagalassos wurden zwei Haupttypen aus Modeln gefertigter Tonöllampen präsentiert sowie zwei Varianten vom letzten Haupttyp. In Seleukeia gibt es mehrere Formen und ihre Varianten. Der Typ 1Lm 100 fehlt in Seleukeia völlig. Wir haben jedoch vom Typus 1Lm 110 (Tafel I; Fig. 4a-6; und Tafel IV, Fig. 4) und seinen Varianten (1Lm 111 und 1Lm 112 = Tafel I, Fig. 3; und Tafel IV, Fig. 1) reichlich gefunden. Sonstige aus Modeln gefertigte Tonöllampentypus sind folgende: Diskuslampen (Tafel I, Fig. 9, 11 und 13), birnenförmige Lampen (Tafel IV, Fig. 2), Lampen mit eiförmigem oder rundem Körper und einfachem Brennlloch (Tafel I, Fig. 10), miniature Lampen (Tafel I, Fig. 14a-15) und (sehr seltene) hufeisenförmigen Lampen.

Bei einer (fast) kompletten Lampe aus Grabkammer-Nr. 3 in der Nekropole (Inv.-Nr. NEK 29) (Tafel I, Fig. 3 und Tafel IV, Fig. 1), die mit einem roten Überzug bedeckt ist und auf seinem Henkel eine unbekannte Figur trägt, weist seine Form morphologische Ähnlichkeiten mit dem 1Lm 112 auf.²⁰ Auf dem breiten Lampenhals gibt es einen sehr dünnen Kanal. Diese hier benutzten radial plastischen Stege um Diskus und Schnauzenkanal ist

18. Scheltens 1993: 198.

19. Poblome 1999: 273.

20. Roovers 1993: 162, Fig. 115, c.



TAFEL 4.

ebenfalls ein sehr beliebtes Verzierungsmuster bei Diskuslampen sowie Lampen mit eiförmigem oder rundem Körper und einfachem Brennloch. Bei dieser Lampe ist der Überzug stellenweise abgeschoben und roter Überzug regelmäßig aufgetragen.

Bei einer anderen kompletten Lampe aus Südterrasse II (Tafel IV, Fig. 2) handelt es sich um eine birnenförmige Lampe mit zentralem Fülloch, die von einer Ringkerbe mit einem Kreisnetz und Punkten umgeben wird. Auf seiner runden abfallenden Schulter gibt es ringsum eine eingestempelte Punktreihe. Die Schnauze hat eine runde Form. Auffällig ist, daß sie mit einem glänzend Überzug überdeckt ist.

Bei einem Beispiel, das aus dem Theater stammt (Tafel I, Fig. 4a-b und Tafel IV, Fig. 4) handelt es sich um eine kleine Lampe, von der nur der Henkel und das Oberenteil erhalten sind, Boden und Stücke der Wandung und Schulter weggebrochen sind, und das den sagalassischen Öllampen im Typus 1Lm 110 ähnlich ist. Diese Lampe hat einen tief eingewölbter Diskus mit einem plastischen Diskusring, und eine breite nach außen abfallende Schulter mit plastischer Weinlaub- und Rebenverzierung. Der ringförmige Henkel ist zweifach gereift und durchbohrt. Der erhaltene Teil des Bodens hat einen leicht konkaver Charakter, der von einer Ringkerbe begrenzt ist. Ein sehr ähnliches Beispiel wurde in Sagalassos 1990 gefunden.²¹

Eine Lampe mit einer drapierten Fraudarstellung (Tafel IV, Fig. 3), deren Teil mit dem Henkel und der Schnauze weggebrochen ist, sowie zwei ganz kleine Miniaturebeispiele (Tafel I, Fig. 14a–15) sind dabei zu beobachten. Die Fraudarstellung berührt mit einer Hand ein Ende ihrer Kleidung, und die andere Hand ist frei. Wir konnten die Persönlichkeit der Frau nicht identifizieren. Ein Beispiel gibt es ebenfalls von einer Volutenschnauze (Tafel I, Fig. 16).

Zur Datierung für diese Lampen kann man nicht sehr viel sagen: Sicherlich keine aus Modeln gefertigten (sowie auf der Scheibe getöpften) Tonöllampen zeigen einen hellenistischen Charakter. Nach unsere Beobachtungen kann man annehmen, daß die meisten aus Modeln gefertigten Tonöllampen meistens zwischen den 3. und 5. Jh. produziert worden sind. Noch spätere Lampen wurden noch nicht gefunden. Die bedeutende Information ist, daß in Seleukeia alle Formen zusammen auftauchen. Beide Formen, die gemeinsam in Lebens- und Arbeitsräumen zusammen gefunden wurden, waren jedoch hauptsächlich für die alltägliche Nutzung; die Funden aus der Nekropole sollen als besondere Funden behandelt werden.

Als eine kleine Stadt weist Seleukeia einen wichtigen Ansatzpunkt für die Tonöllampennutzung in römisch-kaiserzeitlichen Kontexten von Pisidien auf. Eine andere wichtige Erkenntnis zu den Lampen aus Seleukeia wäre die Entdeckung von sagalassischen Lampen außerhalb Sagalassos.

21. Waelkens et al. 1991: Pl. XL (d); Roovers 1993: 161, Fig. 114, c–d.

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Human Agency in Prehistoric Technological Development. A Case Study of PPNB Plaster Production

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Introduction

In the Braudelian theoretical framework *events* represent the short-term level of historical time, whereas socio-economy and environment represent the medium- and long term levels of social time respectively (Braudel 1949, referred in Bintliff 1991: 6–19). According to Bailey (4. generation of the Annales School) social time seems to operate both in a hierarchical and an interactive manner. Longterm structures are considered to restrain/impede short term events. Also, it is recognized that connected processes operate at several time-scales at the same time (Bailey 1983: 165–92). Ladurie (3rd generation Annaliste), in reaction to the braudelian neglect of individuals and events, focuses on *events* as being central in any discussion of change. Events represent sudden changes of established patterns, and events are created by humans (Ladurie 1972, 1979). *Structures* are considered a result of repeated actions over time performed by humans according to conscious or unconscious normative rules. It has always been a problem how to connect these two phenomena of events and structure in practice.

Praxis theory introduces the individual as an active element in history. An element which bridges the various kinds of social time. Giddens expresses the phenomenon by saying that “the link between individual behaviour and large scale structures, as societies, is to be considered the crystallization of discursive knowledgeability (individuals consciously articulating knowledge) and unconscious actions and routine (i.e., day-to-day actions)” (Giddens 1984: 24–25). This concept of “agency”, covering all human thoughts and actions, occurring before the production of “material culture” and catalyzing this production is essential in the current study.

In historical periods at least sometimes you have a chance of identifying some individuals and their actions through the narrative medium (this is not to say that narratives are considered to reflect the historical world directly of course). In the prehistoric era you are without this valuable medium of interpretation. However, I do believe that it is possible in the material record to illustrate, not the individuals themselves, but testimonies of their actions as well as the thoughts which lie behind them. This will be shown in the following case study.

The current study

In this paper I have focused on what may be defined as the cognitive mechanisms operating in technological development. The technology in question is the plaster technology

which was a main characteristic of the PPNB period in the southern Levant (Garfinkel 1987, Rollefson 1990, Rehhoff 1990, Gourdin and Kingery 1975 among others).

It is important to notice however that *cognitive* used in this way reflects something else than the way *cognitive* is normally used. It is the intention to penetrate the mental dimension behind plaster as a cultural product. By this I do not mean all the possible ways of interpreting modelled skulls, plaster sculptures, wall plaster with decorative elements, which has been attempted with success by others (Kenyon 1956; Tubb 1985, 1987; Tubb and Grisom 1995; Herzkovitz et al. 1995; Kafafi 1986; Strouhal 1973). For the current study this aspect is irrelevant. The cognitive dimension of plaster refers here to what you may call the practical ideology (conventions/traditions and at a lower level, routines) attached to the production of the material itself.

Resumé of plaster technology and its social implications

I shall refrain from giving a standard description of the 7th millennium PPNB period, but stick to the few aspects of this material culture which are of relevance here. A thorough discussion of the period as a whole is given in Banning (1998).

As is well known thick layers of plaster are frequently found in PPNB architectural structures. Also, plaster was a dominant feature in PPNB burial traditions where this material was used both in remodelling facial characteristics on skulls as well as in large plaster statues. In short: this material was very dominant especially in the later part of the PPNB period. We also know that it almost completely disappears by the end of the PPNB period, just as the burial practise changes. Likewise it is well known that the traditional way of producing plaster is extremely resource demanding (in terms of manpower and amount of raw materials). The raw materials in question cover both raw limestone but also large amounts of wood, needed for calcination of the limestone in order to make it react chemically. The plaster technology is in itself very complex and must have been at least supervised by a specialized person. Tons of limestone need to be quarried, and broken into minor pieces. Large amount of fuel is needed as limestone must be calcined over many hours at 900 C. Ultimately the process of blending the final matrix of lime, various temper, and water needs to be controlled (Gourdin and Kingery 1975, Kingery et al. 1988, Rehhoff-Kaliszan n.d.). The large quantities of wood needed for calcination encouraged a debate about plaster technology contributing to the deforestation in the Southern Levant by the end of the 7th millennium B.C. with the consequence that the area was more or less abandoned, or at least that people changed subsistence and organizational patterns (REF).

The current study of plaster began with a realization that this simply did not make any sense. I found it hard to believe that people, even in the Neolithic period, would allow a technology, which was not directly related to subsistence, to continue unlimited with the severe and obvious negative ecological consequences that we can see. Data showed that the use of plaster was abandoned in the post-PPNB period, only to be rediscovered sometime during the classical periods. The interesting aspect in the debate was however to identify any conscious attempts to develop the technology in a more economical direction before it was eventually abandoned. And if possible, identify the level of decision responsible for such a technological change.

The question here is not whether plaster as a material was precious to the PPNB inhabitants. It is obvious that it was. The question here is: Was it so precious that no changes were allowed or were changes accepted as long as the overall principles laid out for the use of this

material were kept? If so, do the observed changes reflect an understanding of the ecological stress that intensive plaster production put on the environment, or were changes rather of a more random character?

How is technological change as a concept understood?

In my study I accept in agreement with others that any development or change contains

- (1) an unconscious element (not every action is carefully thought about/mistakes/lack of memory etc.)
- (2) a social aspect (social interaction between humans is considered to be of more importance than human-artifactual relationships)
- (3) an aspect of individualism (Ingold 1993, Humphrey 1976, Giddens 1984: 25–27, Rehhoff-Kaliszan n.d., part I: 19–20)

I imply that people will tend to maintain a certain trait of culture once it was introduced with success and became highly valued (like the plaster technology), and once it was recognized as an integrated part of the cultural identity. In such a case I will argue that they will try to maintain it despite the negative consequences. However, they will if possible, try to diminish the negative consequences by continuously developing the technology.

Concerning technological development of plaster the idea is that if any changes in the production were identifiable it is first of all critical to differentiate between major changes operating at the architectural level of decision (meaning a change in the overall “rules” stuck out by the accepted convention related to this technology) and minor changes at the entrepreneurial level of decision (meaning changes in the day-to-day routines). The idea being of course, that overall conventions (defined as social actions which are not discussed, but are performed according to a set of norms agreed upon) are thought to be more infrequently changed than day-to-day routines.

Next it is important to identify if the changes were in direct response to the severe ecological situation by the end of the PPNB period, or if they were of a random character, as a result of mistakes etc. In this way it should be possible to find out if people in the neolithic period were capable of relating technological development in the architectural sphere with their problematic subsistence situation.

Options of technological development

There are basically three options

- (a) Maintaining the production in accordance with accepted conventions, while ignoring ecological consequences (or lacking the relevant know-how to be able to change it).
- (b) Developing the technology in a random way, i.e., with no specific connection to the ecological problems involved.
- (c) Developing the technology to meet the ecological problems in question.

In the first option plaster from very late PPNB phases will remain identical to plaster from chronologically established earlier phases. Option b) leaves the door open to unexpected technological developments, which may have occurred out of either functional, stylistical, or other reasons. The final option c) suggests that experimentation of plaster technology was

initiated, which resulted in a reduction of “expensive” raw materials, such as limestone and wood for calcination, using an economical point of view. This option would be one way of maintaining the technology, though in a changed version. In order to do that, it is necessary that the producers not only master completely the materials with which they work, but also are acquainted with possible alternatives in their nearby surroundings.

In order to make relevant suggestions of developed plaster technology it is vital to know how the production process works in different versions. There is no doubt that the central question in the debate of social implications of plaster is related to the calcination of limestone. The reason for this is that the calcination is responsible for the largest amount of work in the process. Not only is it necessary to use time and energy in quarrying the limestone. Collecting enough wood for calcining limestone is by far the most resource demanding task, even if one accepts that only about 30 % of the calcite operates as a binder, i.e., is calcined. Of this reason options of change in the mineralogical composition, process of manufacture, as well as minerals’ mutual proportions were concentrated upon. Below the possible options are listed.

I: The late PPNB floors are made of more or less pure lime plaster with minor inclusions of inactive temper contributing volume savings, and the strength of a composite material. No change in time and space is detectable. This situation would imply either a reluctance towards change in the recipe, lack of technological know-how, or lack of insight into the severe ecological situation.

II: The late PPNB floors are basically constructed of a lime-cement material, maybe of the early Roman hydraulic cement type (with the use of pozzolans = clinker materials). Such a composition would highly reduce the amount of calcined lime, but would on the other hand require a very specialized knowledge of the technology itself. A knowledge only mastered completely in the classical periods. Such a change would imply high-level decision taking, and is not considered to be very likely in the neolithic period.

III: The late PPNB floors consist of lime plaster with a reduced amount of calcined lime, as a result of substitution with other materials (e.g., gypsum). As it is well known that gypsum was widely used in the production of white ware, a product also occurring frequently in the PPNB period, this may have been the case with the later floors as well. Such a development implies low-level decision taking in the day-to-day routines.

IV: The late PPNB floors are made of an alternative lime plaster material not involving pyrotechnology, or maybe by using self igniting limestone (materials such as Samagah/Huwwar or Shelaleh Sheed known to be used by locals in certain areas today).

V: The late PPNB plaster floors were products of individual/local composition containing minerals determined by local geological environment and have a random character.

In this case one would expect variation according to specific areas.

Methods and materials

The method of investigation included several mineralogical tests (X-ray diffraction, petrographic thin section (TSPA), and Scanning Electron Microscopy (SEM). Also a chemical test of alkaline and acid solubility of Al and Si, measured by Atom Absorption Spectrometry (AAS) contributing information on the possible use of pozzolanic materials, was introduced (Rehhoff-Kaliszan in press).

A total of 86 samples from Basta, 98 from Ain Ghazal, and 7 from Beidha were analyzed (Fig. 1). The samples were collected during excavation and revisits of the three sites, and

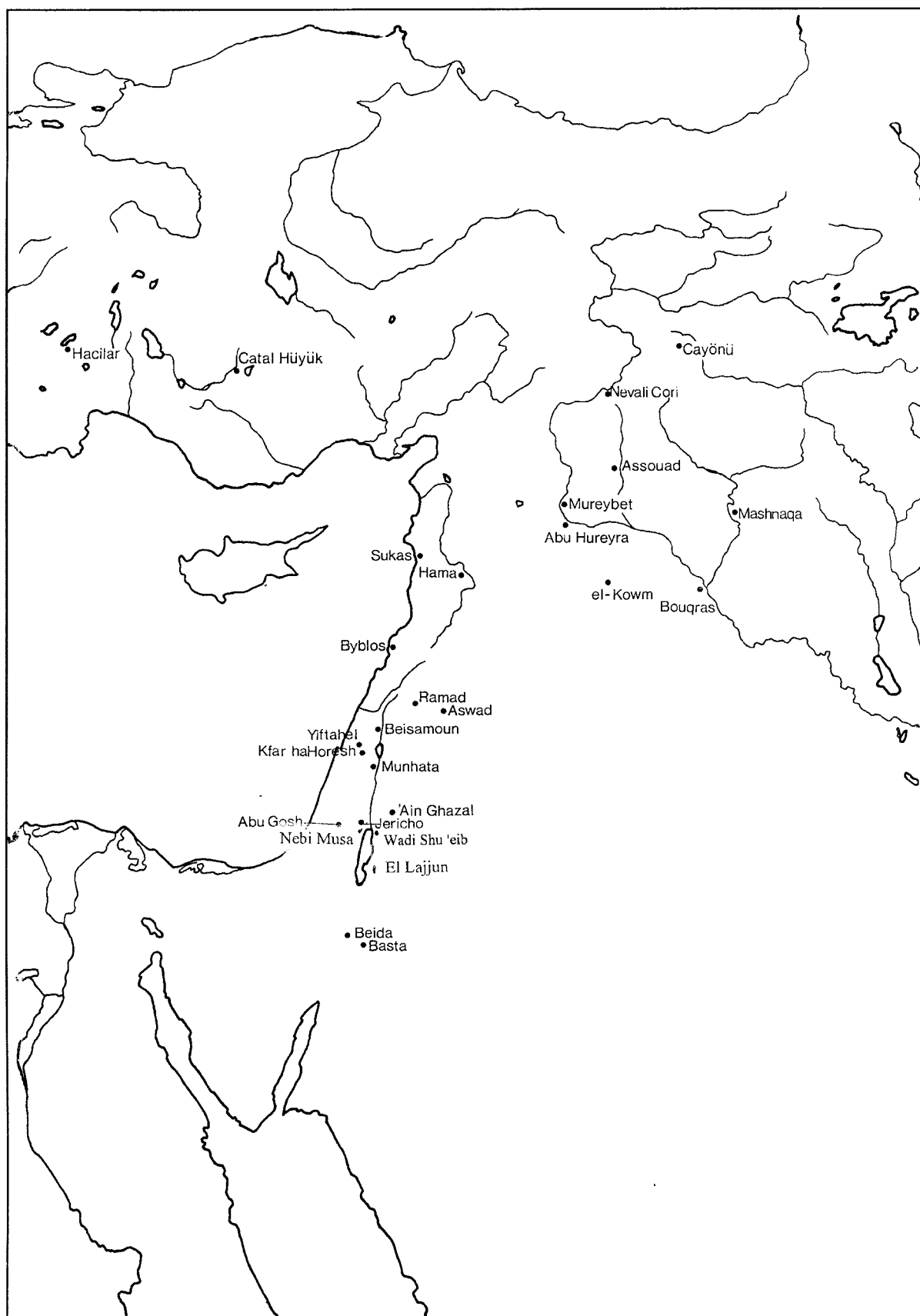


FIGURE 1. Map showing sites relevant for the present study.

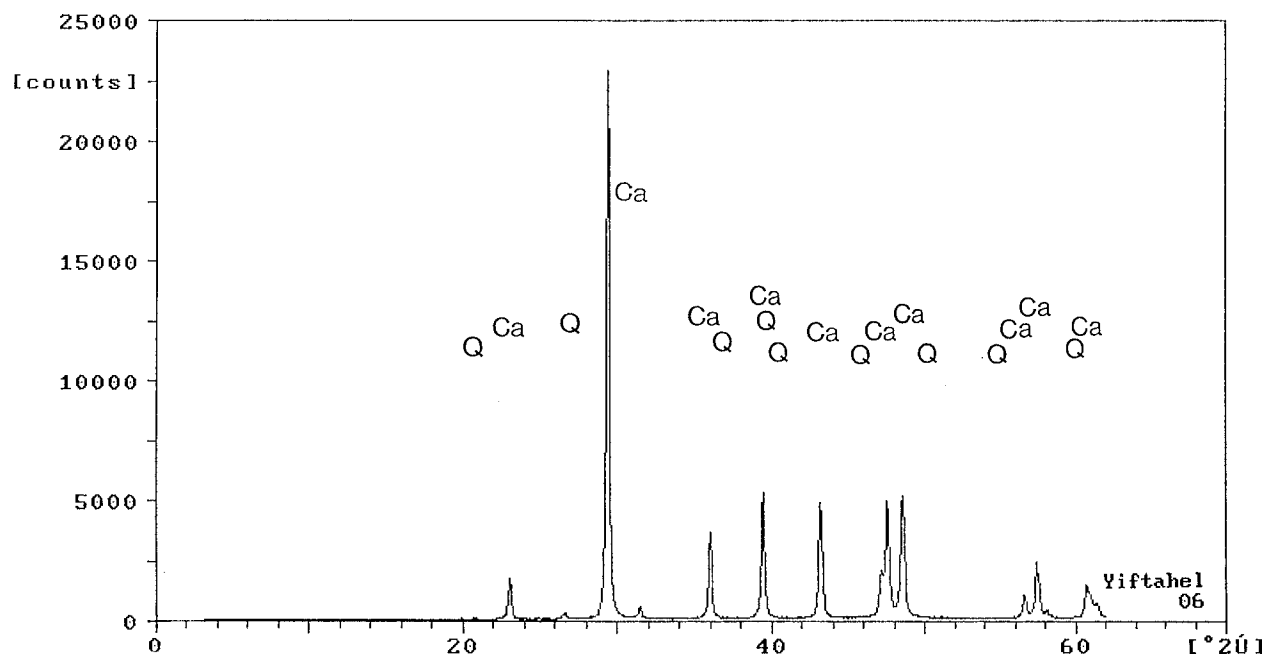


FIGURE 2. Mineralogical composition of plaster samples from Yiftael. Calcite and quartz.

represent spatially as well as chronologically architectural structures in various sizes and function from middle-late PPNB, PPNC, and Yarmoukian phases.

Results

The results of the analyses are to be found in detail in coming volumes of the Basta, Beidha, and Ain Ghazal excavation reports and in Rehhoff-Kaliszan (n.d.) In this paper I shall confine myself to present only the overall conclusion concerning the analytical results.

There seems to be a marked difference in mineralogical composition of samples from coastal sites compared to samples from the Jordan Valley and further East. The coastal sites as a rule maintained the original recipe of plaster production (Fig. 2). However, much of the material occur as finely crushed, unprocessed calcite which did not participate in the chemical reaction. Floors may be layered, but there is no mineralogical difference between layers. Floors are generally very thick (up to 15 cm) and dense. The latter is probably due to a tradition of very thorough polishing.

The samples from Beidha representing the Middle PPNB period are in general of the same type as the coastal samples, though the plaster is not at all as dense, hard, and well polished as the latter. A minor element of the material is some clay contributing a pozzolanic potential. However, this potential seems not to have been used, and the mixtures found in Beidha at the most must be considered to be at an experimental level.

The Late PPNB plaster from Ain Ghazal and Basta is basically made of the local limestone which is illustrated in a difference between plaster from the two sites (Basta plaster is made of dolomitic limestone whereas Ain Ghazal plaster is made of pure limestone) (Figs. 3 and 4). Unlike both plaster from the coastal area as well as the earlier plaster from Beidha, Late PPNB Jordanian plaster is as a rule layered in a foundation layer (plaster bed) and a top layer (plaster spread). The plaster bed seems in general to be quite a simple mixture of calcined lime and various temper and impurities, mainly seen as quartz and smec-

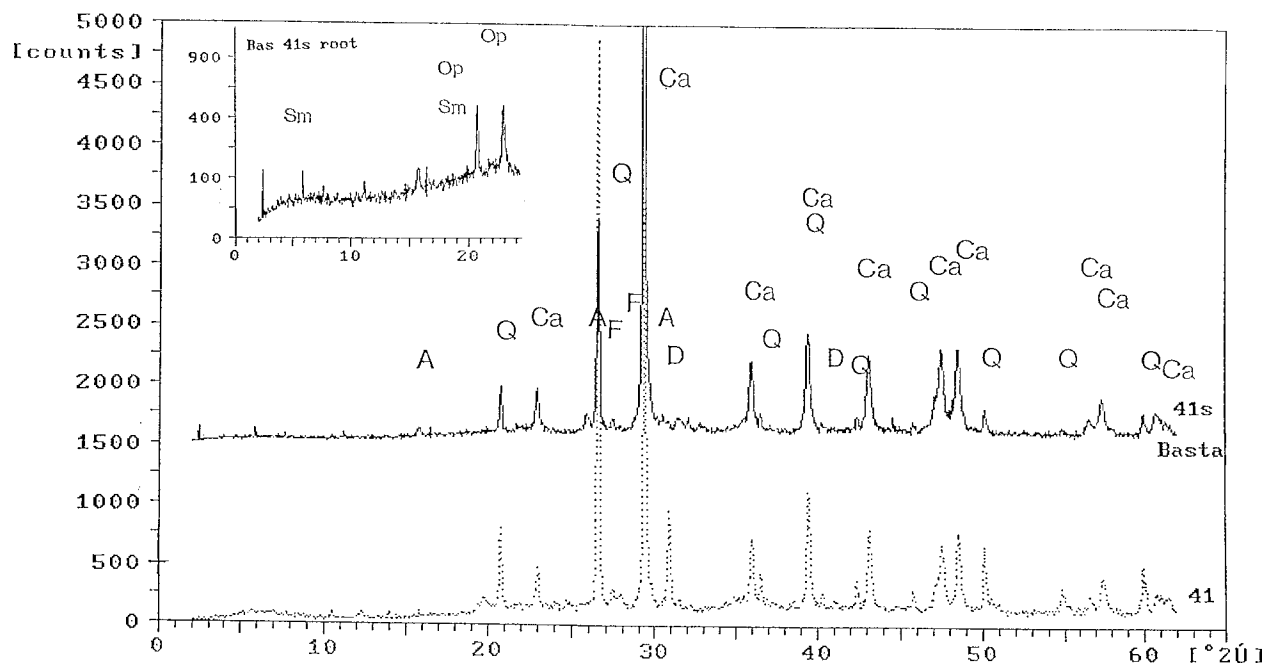


FIGURE 3. Mineralogical composition of plaster samples from Basta. Plaster bed contains calcite, quartz, dolomite, feldspar, and smectite. Plaster spread contains calcite, quartz, dolomite, analcime, feldspar, smectite, and opal.

tite. Frequent occurrences of fossiles indicate that some of the finely ground material is constituted by uncalcined limestone. The plaster spread on top, in both occupations, has a more sophisticated composition, involving a group of minerals, which may be indicative of cement forming relations (pozzolanic activity). These are represented by a quite consistent mineral association of analcime, smectite, hydroxyl apatite, and opal. The indication of pozzolanic activity is supported both by the solubility test, and in TSPA where vesiculous particles, resembling modern fly-ash, in many spread samples suggest that reactive elements were present. The composition of the top layer seems to parallel the youngest cache of plaster statues from Ain Ghazal (Tubb and Grissom 1995: 439). It has not been possible to detect the use of materials such as Shelaleh Sheed and Huwwar in the Neolithic plaster, though it can not be ruled out. For sure, these materials do not count for the the minerals indicative of the lime-pozzolan reactions.

Conclusion

Considering the level of pyrotechnological know-how, small scale developments were expected around the period of time when lack of resources (primarily wood) was becoming incremental, i.e., in the Late PPNB period. As it is, technological changes appear already by the Middle PPNB period in Jordan, and in time turn out to be far more advanced than had been expected. Not only do they have resource reducing consequences, they are a major step in the direction of genuine cement production, a material which was (re)developed in the classical periods and used extensively, especially by the Romans. This means that at an early date the ecological consequences of plaster technology were in fact realized and the technology changed to meet these constraints.

with the early, a development of floor plaster did occur, which is also seen in the statuary. Moreover, there is no doubt that such technological improvement was intentional and definitely a result of careful considerations. The simple mineral compositions of the local limestone rocks, together with a clear compositional difference between layers in the plaster, indicate that complexity was not unintentionally obtained, e.g., by using local hydraulic limestone. Clay as a useful material was discovered and used, though it is not quite clear, if clay was actually burnt to its pozzolanic potential.

The origins of hydroxyl apatite, analcime, and opal occurring in the majority of spread samples have so far not been recorded in the nearby surroundings. However, geological evidence indicates that the Taqiya and Ghareb formations upon which 'Ain Ghazal and Basta are situated, in certain places altered into a mixture of pozzolan and natural cement clinker.

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The Bronze Age Moulds from the Levant: Typology and Materials

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Abstract

The aim of this work is to present a preliminary typology of mould used to cast different kinds of objects, like weapons, ornaments and tools in the Levant during the Bronze Age. Furthermore the results of the investigations carried out on the compositional features of seven samples of clay moulds from Ebla are reported. By means of minero-petrographic and chemical analyses we have tried to define the provenance of materials and obtain additional informations on the technology of mould production

Section I: Typology

Silvia Festuccia

Introduction

This paper reports unpublished moulds discovered at Ebla. The items studied are eight in number and are assigned to a chronological period that covers MB I and MB II. During this research work several difficulties became evident: these difficulties concern both the relationship between the shape of the casting and the final form of the object and the material context, very often found in secondary stratum (pits or archaeological deposits).¹ A clear correspondence between each item and its mould is not always possible: this is due to the fragmentary state of conservation of nearly all the moulds coming from Ebla. Also the absence of a “good” context makes it difficult to date the moulds, especially those used to make tools. In fact the tool shape remains the same for a long period and cannot be used as a diagnostic element in terms of period of production and period of use. The only exceptions are the fenestrated axe and duckbill axe, both of which are assigned to the II millennium. In spite of the lack of updated documentation, the real aim of this paper is to attempt to reconstruct the function of these items using the contemporary Levantine archaeological documentation as a basis for comparison. In addition, whenever and wherever available, the information regarding the context of the find can help present a preliminary typology of moulds used to cast different kinds of objects like weapons, ornaments and tools at Ebla and in the Levant during the Bronze Age.

Furthermore, the results of the investigations, carried out on the compositional features of seven samples of clay moulds from Ebla, are here reported. By means of petrographic and

1. Festuccia 2000.

chemical analyses we have tried to define the provenance of materials and obtain additional information on the technology of mould production.

Typology

Moulds for the casting of bronze tools can be used in three main ways that do not necessarily correspond with different levels of technological development. They may be considered as follows:

- *rough moulds* which consist of a carved lithic slab and that produce only small and flat items;
- *open moulds* which consist of a single block into which a form for an object has been cut. Such moulds, also called “univalve moulds”, generally had a matching flat (uncarved) cover or “valve” to reduce gassing;
- *two-part bivalve moulds* where both members are carved, generally as mirror images to provide contour to the casting; more complex techniques are the *cire perdue* and the sand-mould casting that offers the possibility to reproduce an item made first of wax and then substituted with metal.

Until now at Ebla we have direct evidence only of bivalve moulds and open moulds to which specific types of objects can be associated. The first ones are mainly obtained from basaltic rock, the others are made in clay and limestone (see Materials).

We can distinguish three main categories (weapons, ornaments and tools) and different types obtained from these moulds:

Weapons:

Arrowhead (TM.98.Z.270)(Fig. 1): bivalve mould in basaltic rock. Fragment of square shape ($6.7 \times 4.4 \times 2.8$ cm) that still has the shape of an arrowhead with a biconvex section without ribs, with minute drainage channels on the right side. Next to it, there is the shape for another spear. Between the two a hole to fix another matrix. The archaeological context dates it to Middle Bronze II.

The type represented by this bronze arrowhead has been found at Ebla, Tell el-Dab‘a (Type 7) and only one example comes from Hama.² They all refer to Middle Bronze I and II contexts.³

Axe: besides the two completely preserved examples of moulds in basaltic rock for the production of fenestrated,⁴ and collar axe,⁵ found in a MB deposition, one small bivalve mould has been found (TM.93.PN Centro.222)(Fig. 2) also in basaltic rock, almost totally preserved ($5.8 \times 4.5 \times 2.2$ cm), for a duckbill axe probably of votive use. The shape of this mould consists of two round hollows to stop the fastenings at the edges and a channel to pour the metal; it is dated to the MB I–II. A bivalve steatite mould of the same type but of bigger size ($11 \times 6.3 \times 3.5$ cm) has been found at Kültepe Kanish II. Miniature fenestrated axes have been found at Ugarit, Baghouz, Mari⁶ and Acemhöyük dated to MB I–II.

2. *Ebla*—Rossoni, n.d.; *Tell el-Dab‘a*—Philip 1995: Fig 3: 1; *Hama*—Philip 1989: 94.

3. Philip 1989: 94, fig 24, n 281.

4. Matthiae 1980; Matthiae 1985: 234, n 112; Matthiae 1987: 147; Baffi 1988a: 3; Philip 1989: 49–59, figs. 6–7; Rossoni 1995: 439, n. 309.

5. Baffi Guardata 1988a: 3.

6. *Ugarit*—From the surface of the upper-town; *Baghouz*—From Tomb Z: Philip 1989: 55, 299–301; Haerink and Overlaet 1985: 384–416; Philip 1988; *Mari*—In the Palace of Zimri-Lim, from Room 69.

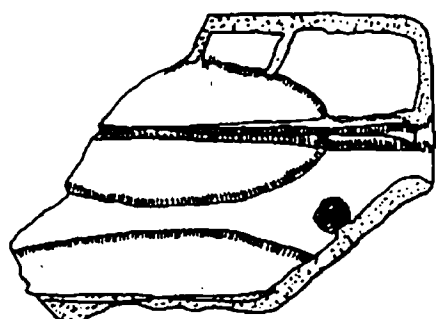


FIGURE 1.



FIGURE 2.

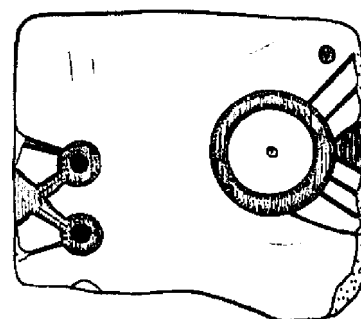


FIGURE 3.

Knife: mould partially conserved with a square section (TM.99.DD.787), used on its three faces. On the major one there is a shape for a knife, on the opposite side there is a shape for a tool, on the smaller sides, the one with burnt traces seems not to be used, the other side shows an initial working process and a deep circular hole. The mould is made of fine sandstone and the dimension is $7.8 \times 2.2 \times 0.5$ cm. The archaeological context dates it to MB II. The knife has a semicircular section for its grip and a rectangular section for its blade. This kind of knife seems to have similar attributes as the knife type named by Deshayes *couteau hittite*. A fragmentary smaller knife, similar in shape has been found at Ebla TM.83.G.217 and dated at MB II. The characteristic of this knife type is a wide blade that gets narrower at its point, similar to the Alishar II knife n 1209 where the convex side is sharpened; on the other knives the concave side is the cutting edge. A derivative of this type with the inner edge serrated continued to be used until the Roman and Byzantine periods.⁷

Ornaments:

Ring and earrings (TM.98.Z.598)(Fig. 3): bivalve mould in basaltic rock ($6.5 \times 5.5 \times 1.5$ cm) of rectangular shape with a hole on one side for the closing and pouring channels for gas exit. On one side you can clearly see a circular cavity in the shape of a ring and two sphere shaped passing holes for earrings is clearly visible. Dated to the MB II.

This ornament is of a very common type and can be found in many sites in the Levant: at Ras Shamra one chlorite bivalve mould ($4.8 \times 2.6 \times 1.5$ cm), the archaeological context dated to Middle Bronze I–II; a bivalve mould in basaltic rock at Kültepe ($15 \times 9 \times 4$ cm) in Middle Bronze II context; a bivalve mould in basaltic rock at Beth Shan; two bivalve moulds at Megiddo one in steatite (7×8 cm) and the other in serpentine (10×6 cm).⁸

Tools: the moulds coming from Ebla and included in this category were involved in the production of tools with a flat point: open fragmentary mould in limestone (TM.94. PNOvest.791) in which are obtained the outlines of two utensils, one with a horizontal end of square section ($7.8 \times 4.9 \times 2$ cm)(Fig. 4); the other with a pointed end with cylindrical section. The archaeological context dated to MB I–II. This casting shape compares with: one basaltic rock open mould (8.2×5.8 cm) from Kültepe; one clay open mould ($14 \times 12 \times 11.8$ cm) from Tell Taynat; one basaltic rock open mould ($5 \times 8.6 \times 4$ cm) from Tell Afis dated to the LB; three chlorite open moulds from Arslantepe (18×9 cm; 18×6 cm; 18×9 cm)⁹ in MB II

7. von der Osten 1937: 263, fig 289, ca. 1209.

8. Ras Shamra—Mould found at south of *Temple aux Rhytons*, room 57. Elliot 1991: 50–51; Kültepe—Özgüç 1955: 78, pl 19: 7; Beth Shan—Rowe 1940: Pls LIIIA: 8; Megiddo steatite—Lamon 1939: Pl 105: 5; Megiddo serpentine—Loud 1948: Pl 269: 6–7.

9. Kültepe—Özgüç 1986: 47, pl 91b; Tell Taynat—Braidwood 1960: 450, fig 350, pl 49: 5; Tell Afis—Mazzoni 1998: 201–209; Arslantepe—Palmieri 1973: Fig 46: 4–5–7.

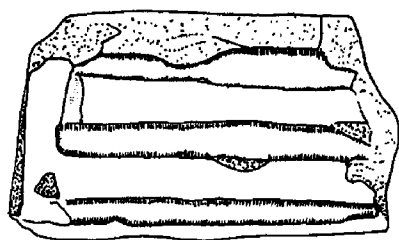


FIGURE 4.

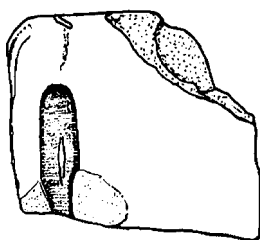


FIGURE 5.

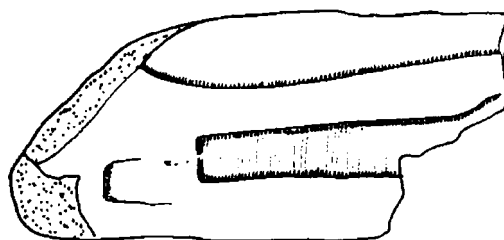


FIGURE 6.

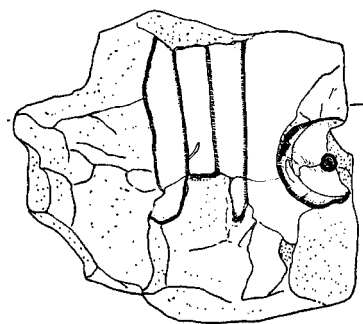


FIGURE 7.

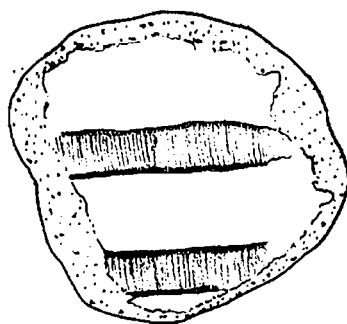


FIGURE 8.

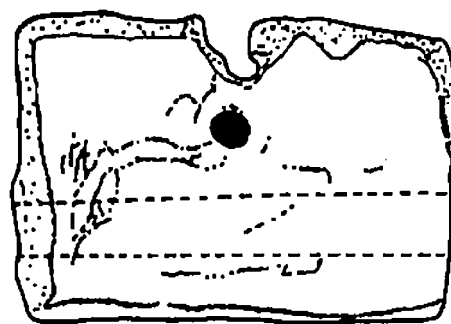


FIGURE 9.

contexts. Flat point type (TM.92.G.753; Sample II) (Fig. 5): caolinite open mould of rectangular shape ($4.1 \times 5.2 \times 1.8$ cm) broken on three sides, with a bar incision of cylindrical section and rounded end, probably used for the making of scalpels. MB/LB. Very similar, always coming from Ebla, is the flat point tool type (TM.94.PNOvest.444)(Fig. 6), a limestone open mould ($10.5 \times 4.9 \times 4.7$ cm). The piece is broken on one side and has the shape of an irregular rectangle. An element is engraved as a bar with shape of quadrangular section, dated to MB II. One very similar open mould in basaltic rock has been found at Megiddo (9×15 cm).¹⁰ Another mould very similar to the one previously described comes from Alishar (d 294), it is made of sandstone, and seems to be part of a mould for a tool.¹¹ More uncertain is the interpretation of three MB I–II moulds that may have been used as utensils, but the conservation state of which is very fragmentary and so does not allow a clear understanding: (TM.78.G.954)(Fig. 7): flat point type open limestone square mould ($9.7 \times 11.2 \times 4$ cm) worked on two sides: one with the engraving of two parallel bars with a quadrangular section and with a pointed tip, another with a deep round groove with a central hole. For comparisons see: a limestone open mould from Tille Höyük (10×4.5 cm); an open basaltic rock mould from Megiddo (8×14 cm),¹² MB I–II. (TM.94.PNord.35, Sample V)(Fig. 8): open pirofillite mould of rounded shape, fragmentary on all sides ($6.2 \times 6.1 \times 2.3$ cm). Extremely corroded shape in which two outlines of rectangular form have been formed (TM.82.G.77)(Fig. 9), open pirofillite mould, fragment in the shape of a parallelepiped broken on one of the long sides ($6 \times 4.1 \times 2.7$ cm), centrally passing holes on the long and short sides and engraving on the long side.

Conclusions

Although we have little documentation, contexts, technology and comparisons indicate that the lot of material examined can be assigned to the Middle Bronze Age. Besides,

10. Loud 1948: Pl 269: 5

11. von der Osten 1937: 235, fig 263, d 294.

12. Tille Höyük—Summers 1993: 54, fig 69–1; Megiddo—Lamon 1939: Pl 105–1.

concerning manufacture we can still make some considerations on the casting techniques used at Ebla in this period and on the relationship between mould and artefact types. The open moulds used to make certain types of objects of common use, like tools, are usually engraved on many sides, when obtained from basaltic rock, whilst they are only engraved on one side when made of less resistant material, such as clay, or more resistant material, such as kaolinite. On the contrary, bivalve moulds are used solely for valuable objects like jewels and weapons and are always made from basaltic rock. The few casting shapes for ornamental use can be traced back to only two types of jewels, whilst the fusion shapes for weapons have at least three, apart from the small votive axe of which no bronze example has been found. The bivalve moulds, additionally, may be recognized for the accurate workmanship which shows a different level of production specialisation, strictly connected with the types of items for which they were used. It is, indeed, not a coincidence that the highest percentage consists of open moulds, which were more frequently used at Ebla, compared to the more elaborate bivalve moulds that probably have been made in highly specialized ateliers in a very small number.

Section II: Materials¹³

Silvia Festuccia, Giuseppe Fierro, Giovanni Gerbasi And Maurizio Palmisano

Introduction

The materials used for the matrix are of different types: steatite provides an ideal medium for carving moulds into which metals may be cast. Steatite is resistant to heat shock, easy to carve, and in general acts as a ceramic in that the stone actually hardens when heated. Sandstone is also used in minor quantities. Steatite and chlorite appear to be more commonly used elsewhere in the Old World, a factor probably reflecting cultural preferences and not relative availability. Cuttlebone, wood, and clay could be used but each has serious limitations which is indicated by the fact that these materials were rarely used.

A chemico-physical study has been conducted on some fragments of moulds coming from Ebla in order to detect their nature. The study aimed at identifying the material the mould is made of, its chemical composition in qualitative and quantitative terms and assessing its mineral characteristics.

Sample preparation

The material to be analyzed was selected and all the chosen samples were taken from the clay moulds in order to study their composition and their changes during use. Seven samples analyzed were irregular in shape and were of considerable solidity, except for the VI and VII samples which were incoherent.

The samples underwent mineralogic examination using an optical microscope and this rapidly revealed the different mineralogic phases present. Furthermore, the observation detected some fossil species belonging to the micro-plankton group (*Globigerine sp* e *Globorotalie sp*).

The qualitative and quantitative chemical analysis was made by employing the X-ray micro-analysis technique. For this purpose, EPMA (Electron Probe for Micro-Analysis) was used, equipped with both WDS (Wavelength Dispersive Energy) and EDS (Energy Dispersive Energy) detectors. Briefly, the principle of operation of an electron microprobe is based

13. We wish to thank Claudia Grasso for revising the text.

on the impinging of a finely focused electron beam on the solid sample. An emission of X-rays from the solid occurs as a consequence of the interaction with the electron beam. The spectral analysis of the X-rays coming from the solid provides data for evaluating both the qualitative and quantitative chemical composition of the sample. The secondary ions mass spectrometry (SIMS) was used to make the chemical analysis of the Sample VII, fig 7 (TM. 86. P.58) which, compared to the other specimens, was incoherent and characterised by an apparent metallic state. The SIMS use ions (so called primary ions that typically are Ar+) to bombard the solid sample in order to extract from its surface ionized atoms or groups of atoms (so called secondary ions). Then the secondary ions are accelerated by an electric field and collected by an analyzer that is able to separate them on the basis of their charge/mass ratio. From the mass value and the corresponding peak intensity the element present in the sample and their relative concentrations are estimated.

A further characterization of the samples was achieved by X-ray diffraction analysis (XRD) that is one of the most valuable experimental methods for detecting both the structure and the phase composition of a crystalline solid compound. This method is based on the interference phenomena occurring when a beam of X-rays is diffracted by crystalline solid. The diffraction is governed by the Bragg law and the diffraction pattern of each compound is characterised by a sequence of diffraction peaks whose position and intensity are typical and, like a fingerprint, identify exactly the substance investigated.

Results

Optical microscope results allowed main classification of the minerals present and detected the geologic domain. All the mineral stages belong to clays and the presence of plankton micro-foraminiferi fossil skeletons (*Globigerine sp* and *Globorotalie sp*) revealed that the clays had come from deep seabeds. The seven samples are in Table 1.

Table 1: Qualitative And Quantitative Chemical Analysis

SAMPLE	INVENTORY NO.	QUALITATIVE ANALYSIS (EPMA-EDS)	QUANTITATIVE ANALYSIS (EPMA-WDS)	MINERALOGICAL CLASSIFICATION	DATING
I	TM.96.V.225	Al, Si	$\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4$	Caolinite	MB II
II	TM.92.G.753	Al, Si	$\text{Al}_2\text{Si}_4\text{O}_{10}(\text{OH})_2$	Caolinite	MB-LB
III	TM.84.G.209	Mg, Fe, Al, Si	$(\text{Mg}, \text{FeII}, \text{Al})_6(\text{OH})_8$ $(\text{Al}, \text{Si})_4\text{O}_{10}$	Chlorite	MB I-II
IV	TM.82.G.77	Al, Si	$\text{Al}_2\text{Si}_4\text{O}_{10}(\text{OH})_2$	Pirofillite	MB I-II
V	TM.94.P.35	Al, Si	$\text{Al}_2\text{Si}_4\text{O}_{10}(\text{OH})_2$	Pirofillite	MB II ?
VI	TM.84.G.194	Al, Mg, Si, Na	$(\text{Al}1,67\text{Mg}0,33)(\text{OH})_2$ $(\text{Si}_4\text{O}_{10})\text{Na}0,33(\text{H}_2\text{O})_4$	Montmorillonite	MB I-II
VII	TM.86.P.58	Al, Si, Cu, Sn	Cu 98%, Sn 1.6%, Zn-Pb-Sb 0.4%	metal on clay	MB II?

All the samples are basically of clay. Especially Sample I (Fig. 10) is made of a caolinite type rock with a fine-grained homogeneous base paste. Macro crystals of different mineralogical phases are not present and the matrix is completely clayey. Similarly to Sample I (Figs. 17–22), Sample II (Fig. 11) has a kaolinite type matrix. Sample III (Fig. 12) is like a clay rock made from a base paste similar to the previous samples. Samples IV (Fig. 13) and

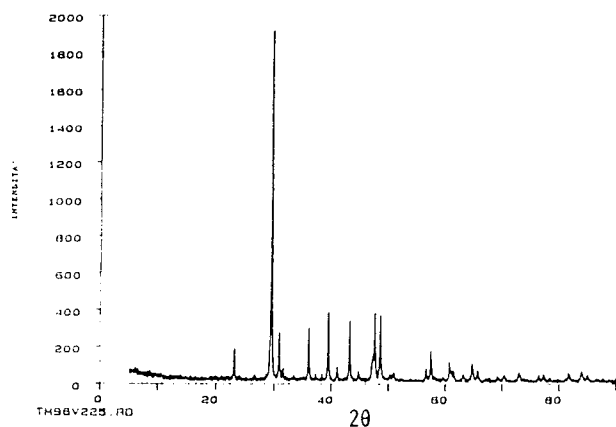


FIGURE 10.

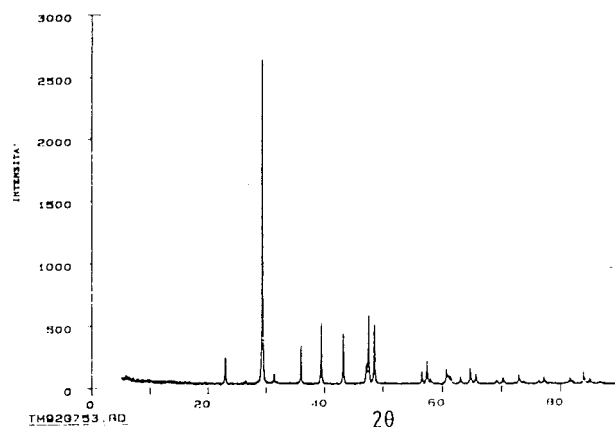


FIGURE 11.

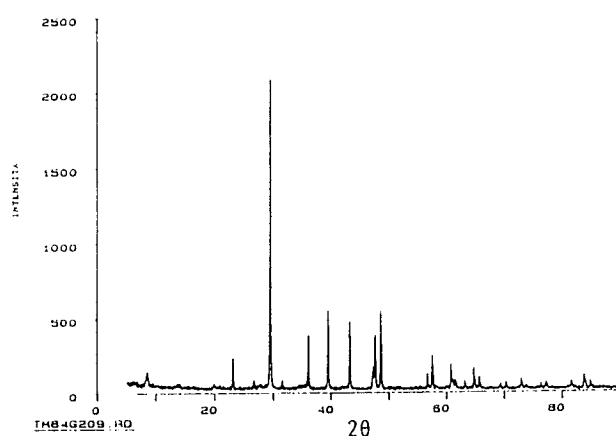


FIGURE 12.

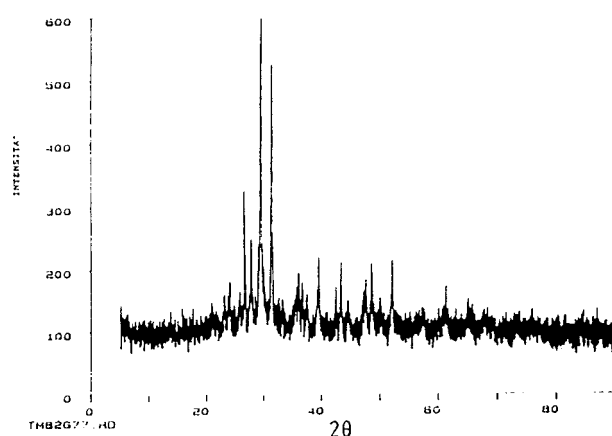


FIGURE 13.

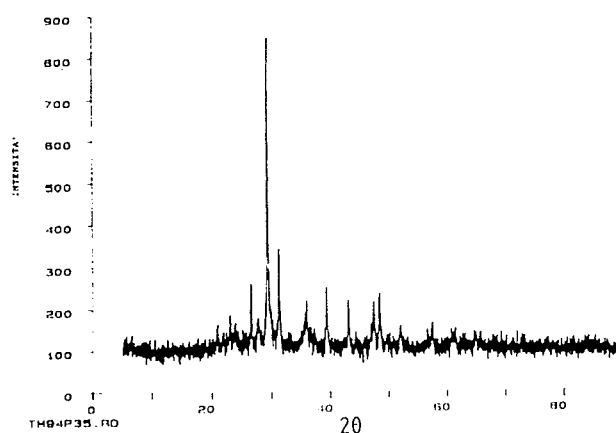


FIGURE 14.

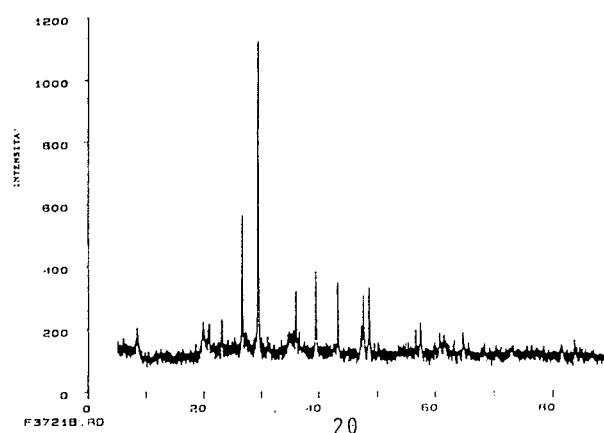


FIGURE 15.

V (Fig. 14) are made up of microcrystalline pyrophyllitic clay. In Sample VI (Fig. 15) an external ring of stronger colour compared to the lighter core can be seen. This difference in tone is to be attributed to a diffusion migration of metal ions towards the central area, no doubt due to the effect of an increase in temperature. Sample VI is made of clay rock. The dating of these samples (see Table 1) is inferred from archaeological contexts.¹⁴

14. Festuccia 2000.

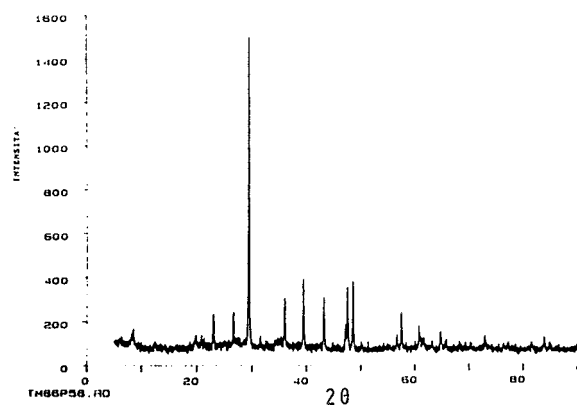


FIGURE 16.

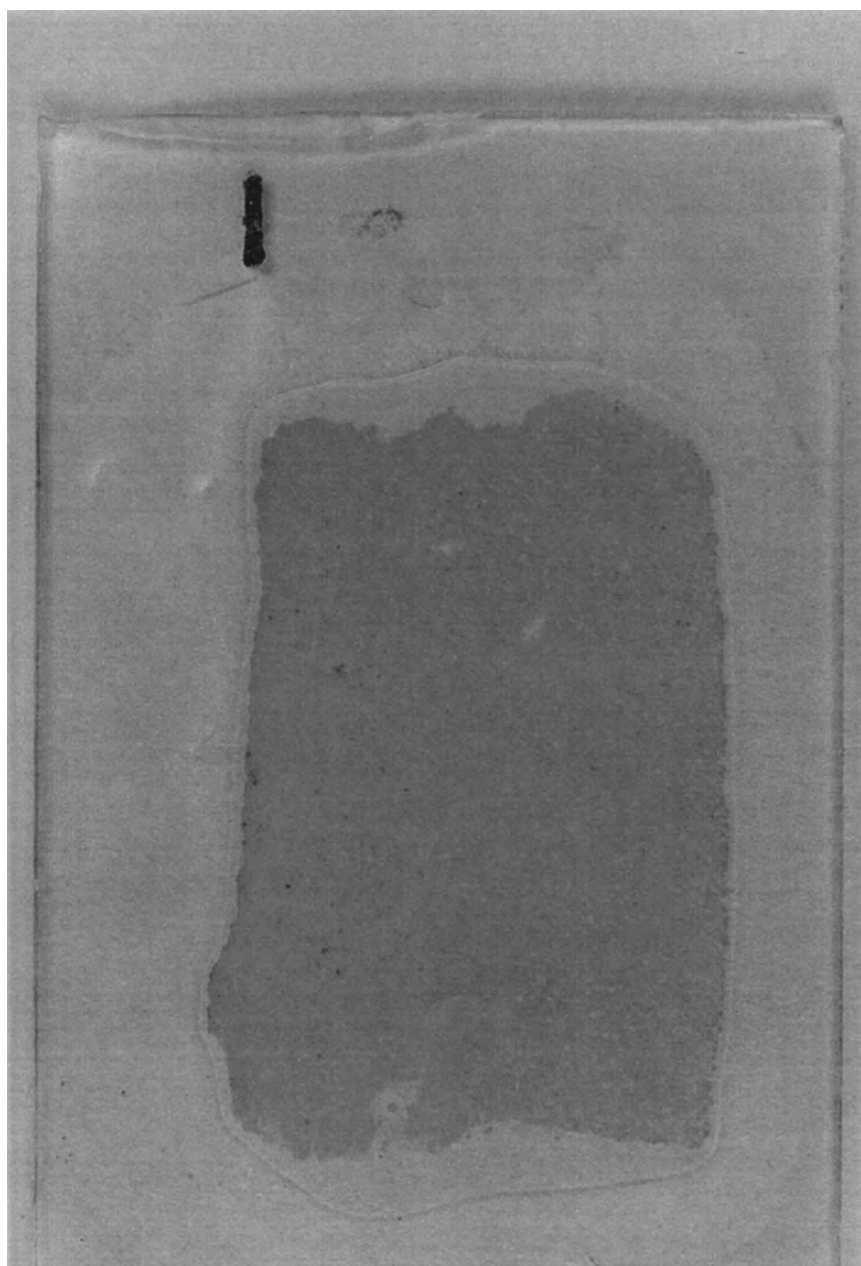


FIGURE 17.

Initial general examination of the diffractograms reveal some similarities, probably due to the fact that they belong to the same group of materials. This observation agrees with the microanalysis results that emphasised a predominant clay composition for the seven samples.

Samples I, II and III are characterised by very similar diffraction spectra. Particularly Samples II and III have diffractograms which are almost perfectly overlayable both between themselves and also with that of Sample I, which, in addition to having the same reflections as the others, has added peaks of minor intensity. The diffractograms of Sample IV and V, although they have some analogies with the previous ones, appear a lot more similar for what concerns overlaying and the relative intensity of the reflections. Particularly the diffraction peaks appear less pronounced compared to those in Samples I, II, III, showing a minor grade of crystallinity when compared to these. These results suggest that Samples IV and V could be made of the same material. In the diffractogram of Sample IV it is possible to see a series of reflections like those of all the previous samples but, comparing the intensity, it appears that the sample has an intermediate level of crystallinity between Samples I–III and that of Samples IV–V. In any case, although with different peaks of intensity, Sample VI seems to have a particular correspondence with Sample III.

Sample VII (Fig. 16) is the only incoherent one presenting an apparently metal composition, and this finding was confirmed by optical microscope observation.

Conclusions

Clays are the most widespread inorganic colloids in nature. They are found in sediments and soils and generally have a tetrahedron (T) and octohedron (O) layered structure, like phyllosilicate ones. They are found in small particles, often in multicoloured compact masses, from which they can easily be reduced without an apparent crystalline habit. Clays are subdivided in the following depending on the strata forming the packets:

- T-O clays, also called *canditi*, whose white colour is a result of the lack of Fe (II), the most important being kaolinite.
- T-O-T clays are three layered clays; two tetrahedron and one octahedron layers, the most important being illites and montmorillonites.
- T-O-T-O clays have four layers; chlorites are in this group.

Their structural composition makes them very plastic and this property is enhanced by the water content that is about 23%. This makes them easy to work and allows them to be made into vessels and other everyday items. Another characteristic of clay is that it can be fired at temperatures of 1000–1500° C and become very resistant.

Also the texture play a crucial role; the ones made by combining natural, more or less refined, clays mixed with other components give different characteristics, such as hardness, colour, porosity, plasticity, firing point, etc.

The analysis of this first group of samples indicates that the clay used has been deliberately taken from clay deposits associated with granites, granites pegmatite, trachytes, andesite and also with metal veins. The most used clay is kaoline, that is almost totally formed of the kaolinite mineral, $\text{Al}_2(\text{OH})_4\text{Si}_2\text{O}_5$. The analyzed clay is practically without iron and other metal impurities which makes it particularly valuable. So the fireclays, like those with which the moulds of Ebla have been made, contain minerals with a base of aluminium hydroxide and are characterised by an extremely elevated thermal resistance, so they are the best for moulds, melting pots and oven lining. Through the XRD analysis some out of doubt similarities have been verified between samples coming from different

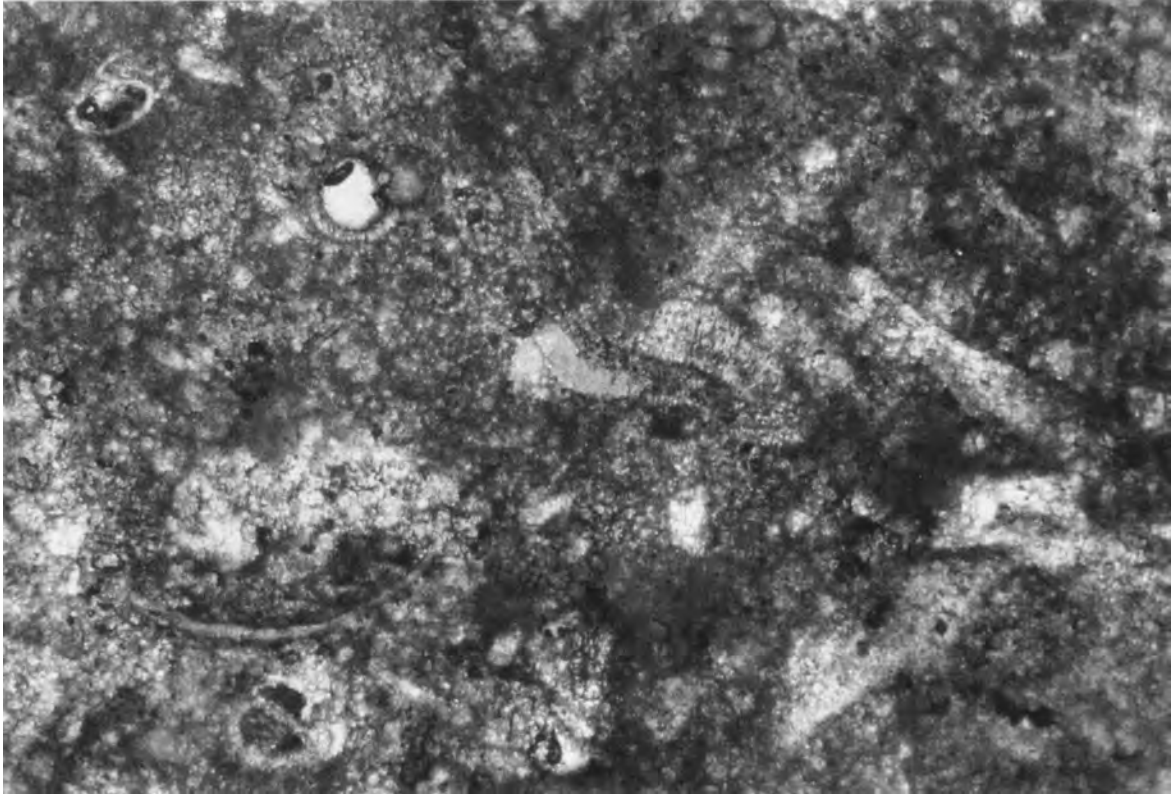


FIGURE 18.

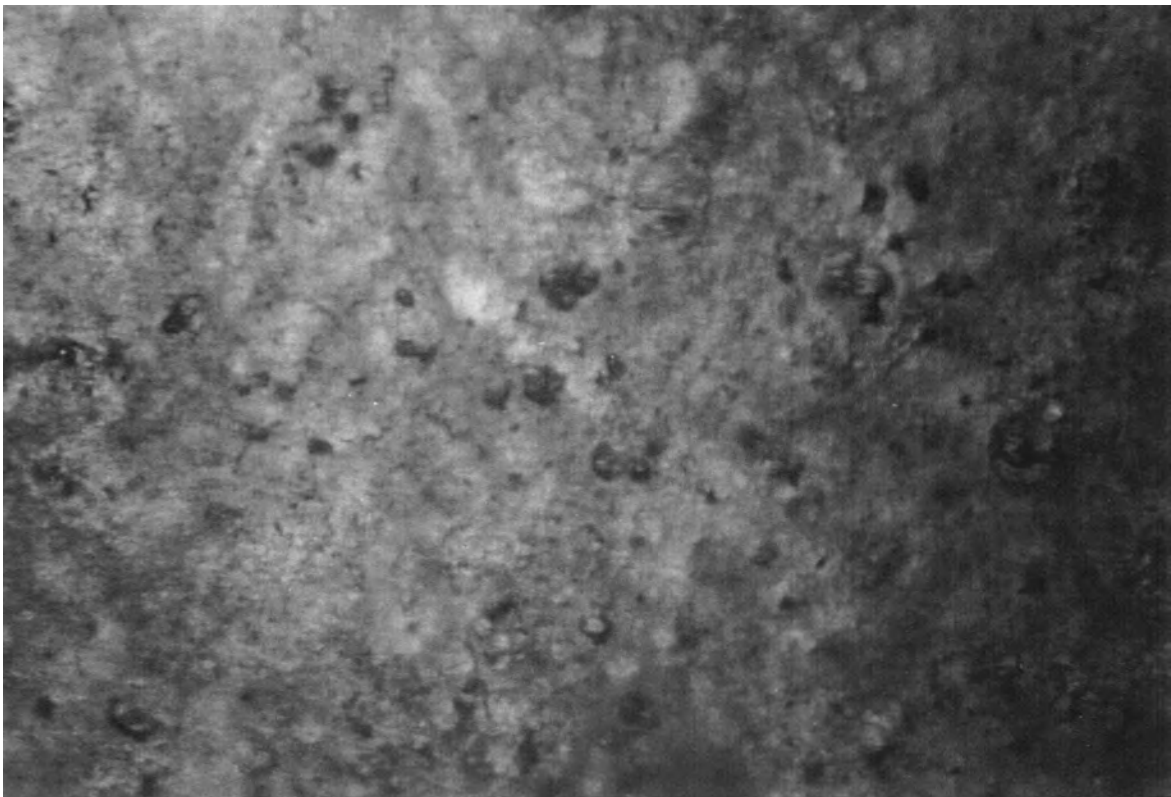


FIGURE 19.

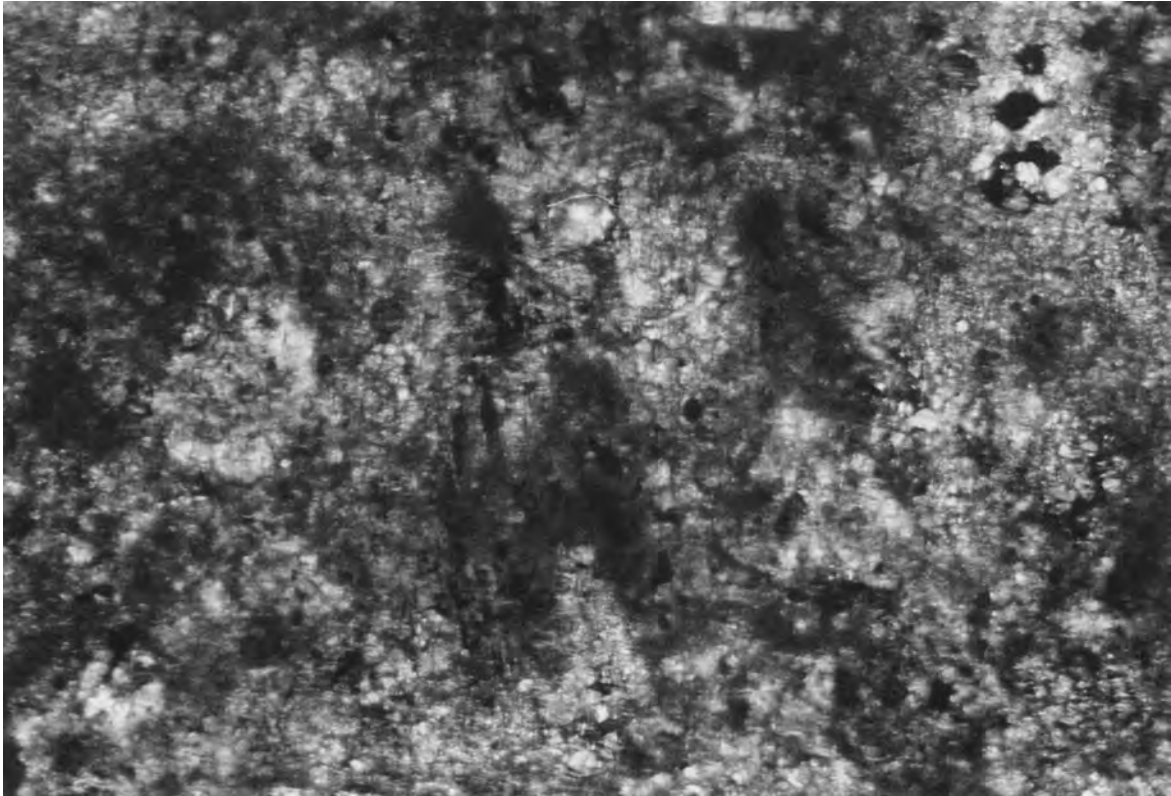


FIGURE 20.

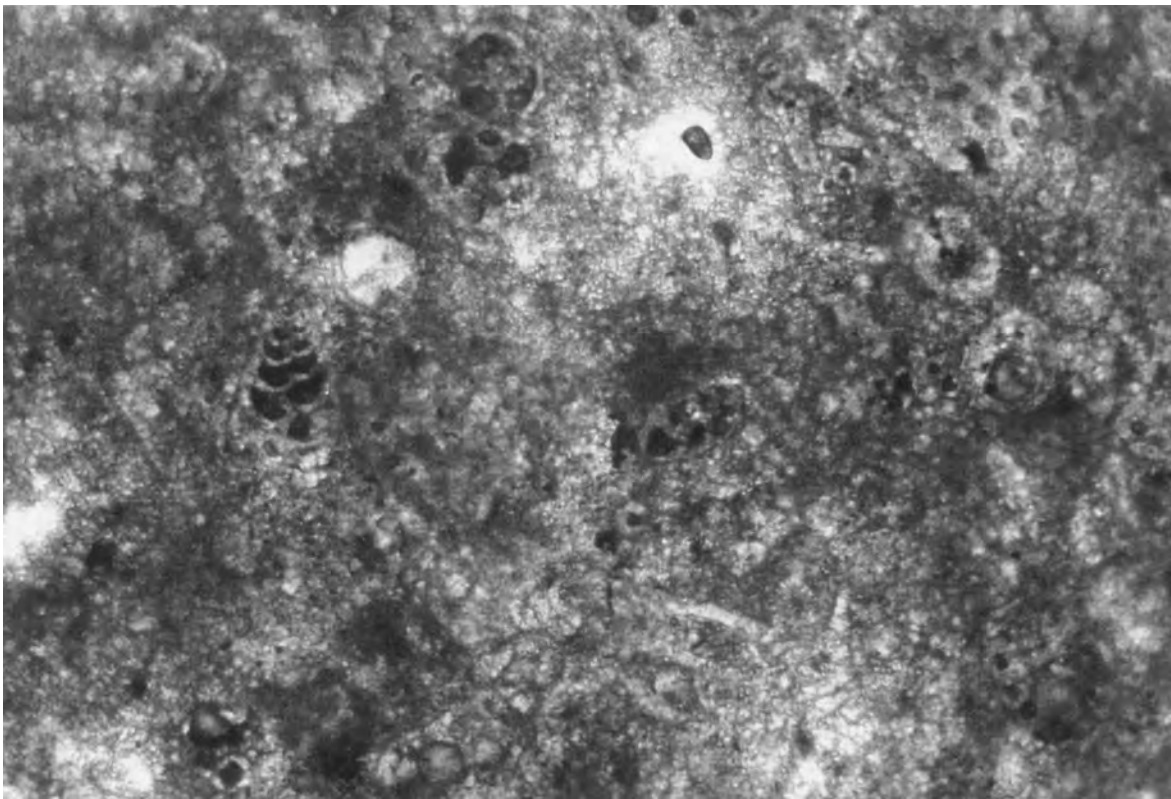


FIGURE 21.

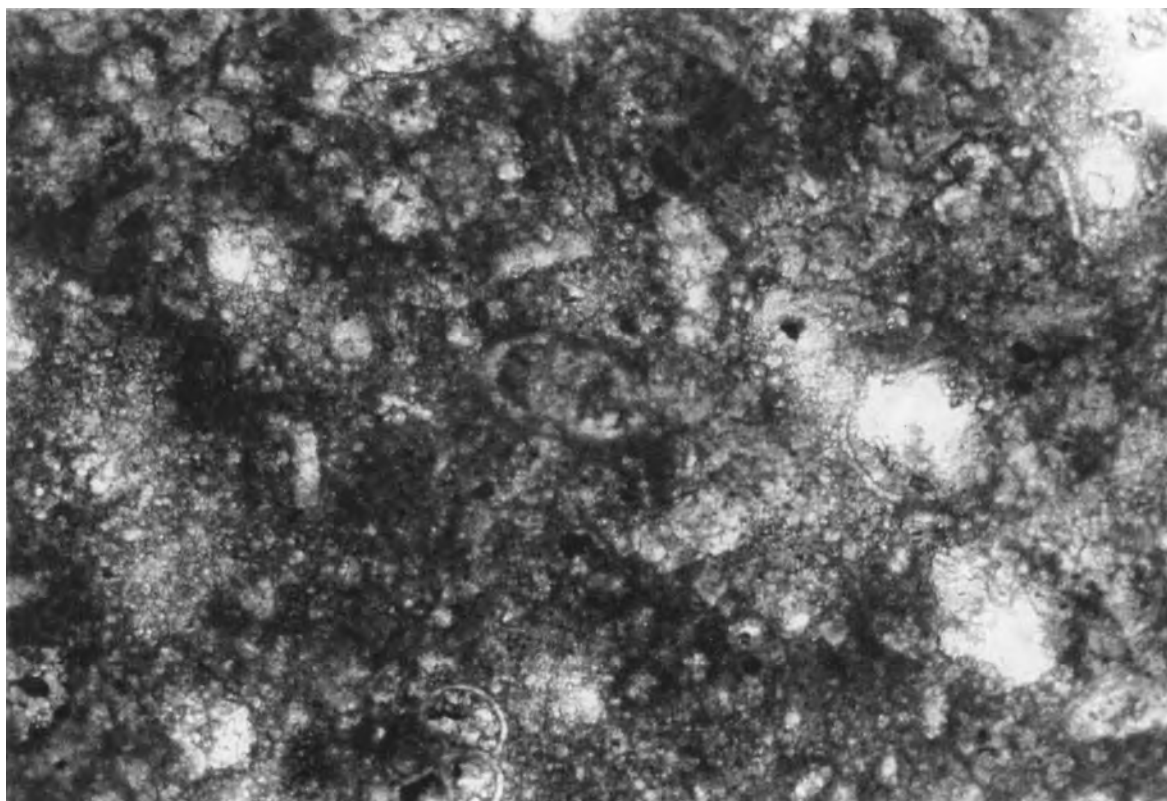


FIGURE 22.

archaeological contexts; the Eblaites could have used the same quarries, still not identified, in different historical periods.

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Excavations at Pyrgos/Mavroraki Cyprus: The Metallurgical Installation of Early-Middle Bronze Age

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Abstract

The prehistoric site of Pyrgos/Mavroraki, situated in a central position, as the extension of the settlement suggests, presents connotations strictly industrial to be referred to copper working which was probably extracted nearby. The excavations have revealed that the whole complex was probably made out of an entity of its own, isolated, on the three sides by a wall (north, south, west) and by a small stream which ran north-south surrounding the whole workshop. The orientation and the general lay out of one building which focussed on the industrial and religious complexes of Late Bronze Age at Enkomi and Kition, raised the hypothesis that it could be a similar, though primitive, model of installation.

We know that Cyprus is the third largest island in the Mediterranean and that it is positioned on a strategic crossroad of three continents: Europe, Asia and Africa. Its cultural evolution was deeply linked to sea trade helped by its natural wealth in copper and mineral resources (Bear 1963). It was believed to be one of the first places where man started to work metals (Tylecote 1981), but the news about this activity in the Early and Middle Bronze Age has only come to light a few years ago. It is universally agreed, however, that in production of copper the ancient Cypriote people pointed the way for the rest of the Mediterranean world (Maddin and Karageorghis 1981).

The Italian Archaeological Mission at Pyrgos/Mavroraki of The National Council for Researches in the last two years had the fortune of bringing to light a prehistoric copper installation of the Early and Middle Bronze Age at Pyrgos near Limassol (Belgiorno 1997, 1998, 1999, 1999b)(Fig. 1). Its dimension is waiting to be clarified, but the evidence indicates that it is unique for size and organisation. It is a remarkable discovery, which we hope will permit us to investigate the most ancient Cypriot metallurgical technology.

Before Pyrgos, fragments of crucibles and rare objects melted without alloying (of Early Bronze Age I) have been found at Kissonerga in the Paphos region (Peltenburg 1991, Elliot 1991). Evidence of copper working has been found in all the Cypriote sites of the Late Bronze Age (Muhly 1986, 1991, 1996), a period which coincides with the Mycenaean presence on the island. But numerous questions about the start of metallurgy are still unanswered: What technology was available? What kind of minerals did they smelt? Did they use blowpipes or bellows? How distant were the mines? What role did the presence of water and wind near the installation play (Constantinou 1982, 1992)?

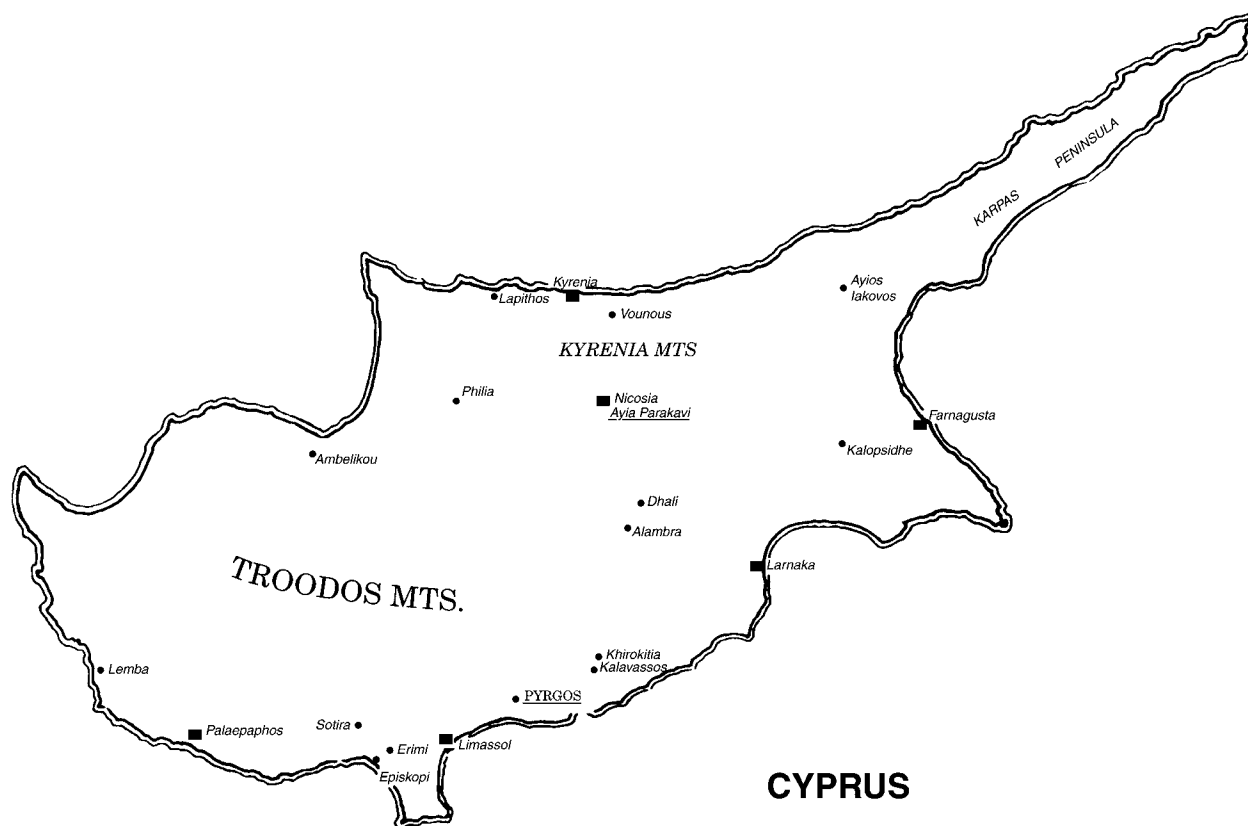


FIGURE 1. Map of Cyprus.

Fortunately, the installation of Pyrgos/Mavroraki is not a domestic forge but a true metallurgical centre, specialised and exclusively created for the transformation of the mineral into metallic copper for processing objects. The key components in these operations were the proximity of the copper mine and the water, essential elements during the entire processing of copper. The mineral had to come from nearby outcrops where ancient galleries indicate the millenarian cultivation to exploit mixed sulphides (Fig. 2).

Some instruments found at Pyrgos, such as maces from mines (Fig. 3), heavy ring hammers and mortars, should be connected with the mining activity that was carried out not far away from the settlement.

The metallurgical settlement pattern

The main fulcrum of the settlement, perhaps the more ancient nucleus, was located Northwest of the modern village along one of the arms of the river Pyrgos. From that point the occupation extended in an irregular but logical way, following the Pyrgos branches and the roads towards other settlements and mining cultivation. The maximum extension of the settlement corresponds with the sudden abandon of the area in the second half of the Middle Bronze Age. A provisional calculation, made on the evidence of the archaeological material recovered during the surveys in 1996 and 1997, shows an occupational extension of nearly 30 hectares.

The diggings of the last three years revealed the presence of a torrent that bordered the industrial area before flowing into the river Pyrgos (Belgiorno and Giardino 2000)(Fig. 4).



FIGURE 2. Gallery entrance at *Perivolia*.

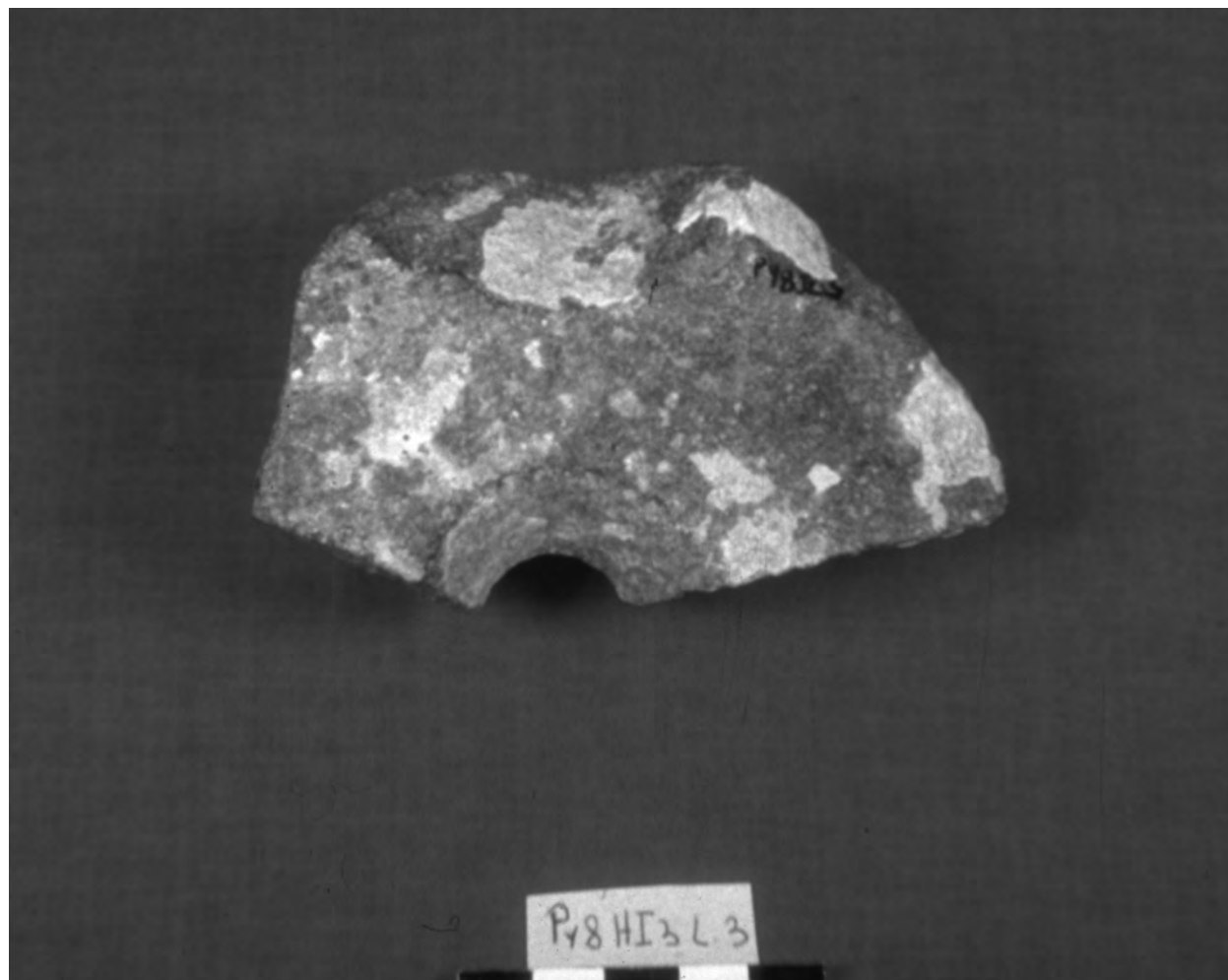


FIGURE 3. Fragment of a stone ring hammer.

The structures of the copper workshop were oriented in a strategic way on the slopes of Mavroraki hill in order to intercept this water and the direction of sea wind. This position besides favouring the feeding of the fire for the furnace removed the toxic smoke from the workers and their habitations.

The torrent housed the main washing operations to separate the copper from the amalgam of the other minerals and constituted the most important facility for the first step of the copper minerals processing, after the crashing of the ores. The evidence of this operation is offered by the presence of grinders, pestles and the stone tools found in number (Fig. 5), which demonstrate that in the workshop one of the principal activities was the crushing of the ores. The same operation was repeated for the slags after the first smelting of metal to collect prills of copper imprisoned inside them.

For this specific function the hydraulic system of Pyrgos is one of the most ancient examples of “washery” arranged inside a metallurgical complex and demonstrates how the water was directly connected to the prehistoric metallurgical techniques.

The working places: niche-shelters, furnaces and benches

It is not easy to reconstruct the logical distribution of the copper processing found in Pyrgos. From the quantity of copper slags and copper mineral waste recovered we presume that



FIGURE 4. Pyrgos/Mavroraki Map. Excavations 1999.

the smelting furnaces were located in the courtyard organised beside a large roofed building. The unique permanent structures of the open air workshop revealed the three walls in the open court, with two niche shelters for the operations of cleaning and refining the objects (Fig. 6) and some “benches” built in connection with querns and mortars (Fig. 7).

We presume that the three walls formed a kind of protection, in terms of privacy and for protecting the secrets of the processing system during the works. The two round enclosures



FIGURE 5. Set of stone tools.



FIGURE 6. Working place with tools.



FIGURE 7. Group of stone querns.

facing East and North were probably devoted to the final operations of the refining and polishing of the objects as appears from the stone tools, whetstones and different kinds of sharpening tools. Two whetstones with string-holes at the top for suspension have close parallels with large whetstones found in the Pyrgos blacksmith tomb (Belgiorno 1997)(Fig. 8). But the most impressive evidence of copper processing in the courtyard area was constituted by the huge quantity of ashes, carbons and slags found everywhere in the filling soil with pottery, copper prills and fragments of furnace lining (Fig. 9). Expedient and curate stone tools for grinding and crashing and a quantity of flints referring to the different activities performed accompanying the different phases of copper processing have been discovered in every level.

Other remains of differently sized structures in terms of very damaged stone foundations of features found in connection with cumuli of ashes were located nearby and inside circular depressions of approximately 50 cms. These features appear to have had a circular shape (Fig. 10) and were arranged using stones and mud-bricks. White plaster remnants found on the base of their walls and on the ground floor nearby testify that plaster was largely used to refine every kind of structure. Most of the ground floor of this area is peppered by pits excavated, used, closed and reopened many times, which may be related to the intense activity and the long use of the site as a copper workshop.

Consequently the lack of fragments of clay tuyeres leave us to suppose the existence of a complex method to organise the smelting, completely different from the known patterns of Enkomi and Kition (Karageorghis 1985). This hypothesis seems to be confirmed by the quality of slags full of pure copper prills (Fig. 11) which demonstrate that the system used to smelt the minerals was still primitive (Gale 1991). The Pyrgos metallurgists had difficulties



FIGURE 8. Whetstones for sharpening.



FIGURE 9. Pieces of furnace lining.



FIGURE 10. Furnace remains.



FIGURE 11. Copper slags.



FIGURE 12. Juglet from the abandon level.

to reach the temperature necessary to smelt minerals and most of the copper drops remained imprisoned in the slag. Unfortunately the fragmentary conditions of the furnace structural remains do not permit us to make the complete reconstruction of them but only to make hypothesis based on the evidence of the abandon level (Fig. 12) of Middle Bronze Age when everything remained in its original function and position after a seismic event.

Different patterns of pits were probably destined to different employment, but it is not easy to understand their real function. Some of them are simple pits formed in earth and plaster as small depressions located in the centre of a rough white plastered floor. Their dimensions varied from 35 to 25 cm. A peculiar shape of two pits assembled together like Siamese twins, with a hole connecting the two (Fig. 13), may be compared with the famous and most debated Egyptian representation found in the Sixth Dynasty tomb of the visier Mereruka at Saqqara (Duell 1938). A similar feature belonging to a forge of Roman period has been found by W.Fasnacht at Almyra in Cyprus.

The variety of the pit shapes suggests a different service for the copper processing and testifies that the Pyrgos/Mavroraki installation was really organised like a proto-industrial



FIGURE 13. Double pit.

complex, qualified to transform the copper minerals into metal and the metal into objects. It was however a system, which foresaw the mechanical extraction of the slag, pulling down the walls of the furnaces to extract them.

In the centre of the courtyard where there was the largest concentration of pits carved in the ground floor, a central bench was located. It was built in stones and mudbricks (Fig. 14) and plastered with white lime, which also covered a large portion of the floor around. On the top, this bench has a cavity with stones around, which support a circular slab used probably like a sort of lid (Fig. 15). In front of the bench, against the south-facing wall, was found an assemblage of large stone querns and pestles, which demonstrate that the most important working place of the installation was located there.

Of special interest in metallurgical terms could be a large pit (dm 0.50 m, 0.35 m deep) positioned beside this bench. The pit had an unusual stone slab roughly rectangular in shape positioned at the top, emerging vertically from the ground (Fig. 16) with the refined side facing the bench, it appears to have been an integral part of the working place, since its position seems aligned with the bench, and the stone slab set in the middle of it. The pit was carved in the ground and plastered with “cement” and small stones and its external edge, not emerging from the ground level, was formed by pieces of mudbricks set with plaster (Fig. 17). Its filling soil contained only ashes, carbons and burned pottery sherds belonging all to a RPIV Jug.

On the edge, near the bench, there was a circular depression, which on first examination looked like a small cavity for housing something, but, after a second examination of the pit



FIGURE 14. View of the central bench from the top.



FIGURE 15. Bench's cavity opened with the lid on the floor.



FIGURE 16. Stone slab set in the middle of the pit.



FIGURE 17. The bench with the pit on its left.



FIGURE 18. The pit with the circular depression on the left.

and taking some samples from inside the wall for analyses, a deep hole was found at the bottom. This appeared to be a passage (Fig. 18) connected with the interior of the pit. This penetration which runs down the wall and through it below, could belong to the active phase of the circular structure, and define the use of the pit. But the bad conditions of these remains due to the fragility of the burned soil, suggest to await the results of the analyses before making any concluding hypothesis. As the contents of the pit dates to the abandoned phase, it is possible, but unfortunately not yet provable, that the pit could have been used before for a long period, and that it had been deliberately abandoned at the end of the Middle Bronze Age. An additional factor in favour of this interpretation is the founding of a R.P.IV Jug intentionally crashed inside it.

The variety of the pits and their dimensions suggests a differential service for copper processing and testifies again that the Pyrgos/Mavroraki installation was really organised like a proto-industrial complex, qualified to transform copper mineral into metal and metal into objects. In Cyprus this self-sufficient installation was presumably a common pattern of forging during Early and Middle Bronze Age and probably its system of working was not completely abandoned in Late Bronze Age.

The first analysis made on the Pyrgos slags and forged remains show that the slagging process was already employed as a smelting method. Such a process, which requires adding a quantity of iron oxide to the coal and minerals, is rare in the very beginning of copper metallurgy. It was processed to take advantage of minerals not extremely rich, and to save the necessary fuel for feeding smelting operations.



FIGURE 19. A fallen wall.

It was, however, still a primitive system, that foresaw the mechanical extraction of slag, by pulling down the walls of furnaces to extract them. The slag cumulus absence at Pyrgos thus demonstrates the existence of two main operations in copper processing. The Cypriote method of crushing the slag to recuperate the copper drops imprisoned, and the disposing of the remains, which probably were thrown away in the nearby torrent, is perhaps the explanation for the difficulty in finding traces of smelting activities in Bronze Age sites.

More architectural remains connected with the central court and bordered by the stream were found south of the court. The mudbrick walls erected on foundations made of stone heaps seem to belong to a large rectangular building oriented East West.

Of these structures only the bases of double rows of stones remained in situ, while the bases of those in a single row are all collapsed in the same direction from South West to North East. Plastered wall remains (white lime) belonging to the collapsed northern wall have been found in the area where the mudbrick structures have fallen. They appear as a roughly made white floor full of semicircular impressions probably left by the shattered mudbrick ruins. This singular sequence of collapsing and the position of the fallen stones fixed sideways on the ground (on the carpet of plaster detached from the wall) (Fig. 19) would suggest that the site may have been abandoned suddenly because of an earthquake or similar disaster. The finding of a heavy earthen wave oven completely overturned from its housing gives support to this theory. A similar hypothesis was also assumed by J. C. Schaeffer (1968, 1971) for Enkomi, on the basis of findings and recordings made by him on Cyprus and other sites throughout the Middle East. Schaeffer claimed that there had been at least



FIGURE 20. Fragment of a steatite Chalcolithic idol.

five occasions in the Bronze Age when catastrophic devastation occurred and was convinced that these catastrophes were the result of natural events.

Two of these were located by Schaeffer (Early Bronze Age between 2300 and 2000 B.C.), the first co-inciding with the end of the Old Kingdom in Egypt. Whilst the end of Middle Bronze Age was marked by similar destruction from evidence found at Ugarit, Beit Mirsim, Jericho, Bethel, Hazor and Lachish in Palestina, Alaça Hüyük, Alishar and Boghazköy in Anatolia and Tepe Gawra in Mesopotamia.

The building discovered was probably opened on the external court and roofed. Meanwhile, the content of material recovered inside it showed it also had a cultic purpose. The pottery and the bones assemblage found inside displays characteristics that set it apart from the remains so far found at Pyrgos. The material was almost certainly deposited as a result of ritual activity and the location of choosing the bones as symbolic offerings was probably significant in ritual terms, being predominantly positioned alongside of the bench which runs all around the inner face of the walls. The animal bones are of some interest because they show an almost exclusive preference for the mandibles of cattle.

This degree of selectivity in a cult assemblage is not common at other Cypriote Bronze Age sites connected with copper and religion, such as Enkomi and Kition (Knapp, 1986; Webb 1999). And it is possibly a result of the selection of bones of sacrificed animals according to precepts that were particular to the cult being worshipped.

For Pyrgos, cattle, pig and deer were apparently the species regarded as worthy of forming votive offerings. The parts of the carcass represented were also a noteworthy feature: for

cattle (and pig) mandibles were most common, while horn-cores and phalanges were rare. In terms of purely dietary considerations, this represents the better-quality meat *only for the pig*. The lack of cattle horns is not easy to explain, but certainly represents a significant degree of selectivity in the Middle Bronze Age depositional practice.

Whether or not we will find a parallel for this assemblage, it is clear that pottery of high quality and specific animal bones were brought into this room and left for a special purpose. These offerings appear to have been in situ at the moment of the collapse of the wall and had not been disturbed by later occupation at the site.

The suspicion of the existence of a religious institution in Pyrgos connected with the copper processing dates back to the beginning of the excavations when there in the northern sector of the courtyard was found a large fragment (Fig.20) of a steatite Chalcolithic idol. Another two clay fragments of late Chalcolithic and Early-Middle Bronze Age idols found more recently confirmed the existence in the area of some religious practices dating back to the beginning of the most ancient occupation of the site.

These evidences together with the deposition found in the building facing the courtyard support the common opinions on the religious character of the later Cypriot copper workshops and especially of the ones discovered at Enkomi and Kition (Knapp 1986, 1988; Steech et al. 1985). Both the evidences should be interpreted as witnesses of the sacred character of the area, whose main destination in the Bronze Age was undoubtedly the metallurgical one.

On the whole, it is very difficult to give a full interpretation of the religious character, but undoubtedly it belongs to the complex of magic practices to protect the metal processing testified in all the history of metallurgy till today. In all periods, all countries and all cultures the religious aspect of the smithy was linked with sexual taboos, regenerating powers and complicated bloody rituals (Eliade 1962, 1991). They are memories of the most ancient beliefs about the birth of the metals in the mother earth, which gave the origin to the alchemical theories and experiences. A link between the world of magic and the world of science in the history of technology. In turn it is easy to believe that Cyprus too, since the beginning of the metallurgy, had its own beliefs related to the metal processing, which influenced deeply the Cypriote religion.

In conclusion, I would like to underline that the discovery at Pyrgos has opened up new possibilities for investigating the technological background of Cyprus and redeems the island from the cultural “ghetto” where scholars had confined it to. Having only funerary evidence, they have always judged it to be inferior in terms of metallurgical technology compared to other contemporary civilisations of the Mediterranean horizon. Today it is unthinkable that the Pyrgos installation was not backed up by a high level culture. Only this could allow people to operate in tranquillity and, above all, to organise the work together with the refuelling of raw materials for the maintenance of the working forces.

The certainty that the island was perfectly organised for cultivating its richest mineral resources and for extracting copper, already from the first half of the 2nd millennium, imposes the re-examination of routes and traffics for supplying this metal into the Eastern Mediterranean.

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Iron Smelting and Smithing in Northern Syria: The Context and Its Interpretation

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Abstract

Operation G at Tell Shiukh Fawqani, Northern Syria, offers conclusive evidence for metallurgical activities of the Iron Age III period, attested in a well-excavated context. The archaeological deposit and the finds are analyzed and interpreted in the broader frame, the northern Mesopotamia Assyrian route to iron sources in Anatolia

Introduction

An area investigated during four campaigns in the years 1995 to 1998, Operation G at the site of Tell Shiukh Fawqani in Northern Syria, has revealed itself a much more significant archaeological deposit than it originally promised.¹ It proves to the existence of *in situ* production of iron and metal-working activities in the early seventh century B.C., contemporary with the dwelling containing the Aramaic and Cuneiform archive of one merchant *Se'-usnî*,² excavated on top of the mound.

The site of Tell Shiukh Fawqani is located on the Upper Syrian Euphrates only few kilometers to the south of the Turkish border, on the eastern bank of the river (Fig. 1). It has been excavated by the author in the frame of the GIRA,³ as part of the archaeological salvage operations in the Tishreen dam area.

As already reported in the 1st ICAANE, the topmost layer uncovered in Operation G encompassed some 14 inhumation graves dated to the early fifth century B.C. Grave goods included pots, jewels, scarabs and a knife, all personal items having belonged to a substantially local rural population included in the large Achaemenid Empire.⁴ Beneath the inhumation graves, two layers, Level A and B, were excavated open areas.

After a presentation of location and stratigraphy of the different phases, the peculiar finds and their relevance for the interpretation of the structures on the site will be forwarded. An analytical presentation of the archaeometric data on slags related to iron production is, however, too conspicuous to be treated here in detail and is handled elsewhere.⁵

1. Bachelot et al. 1995; 1996; 1997; Luciani n.d.

2. Fales 1999.

3. The GIRA (International Group for Archaeological Research) is directed by L. Bachelot, CNRS, France and F.M. Fales, University of Udine, Italy.

4. Luciani 2000c.

5. Luciani n.d.; Luciani et al. n.d.

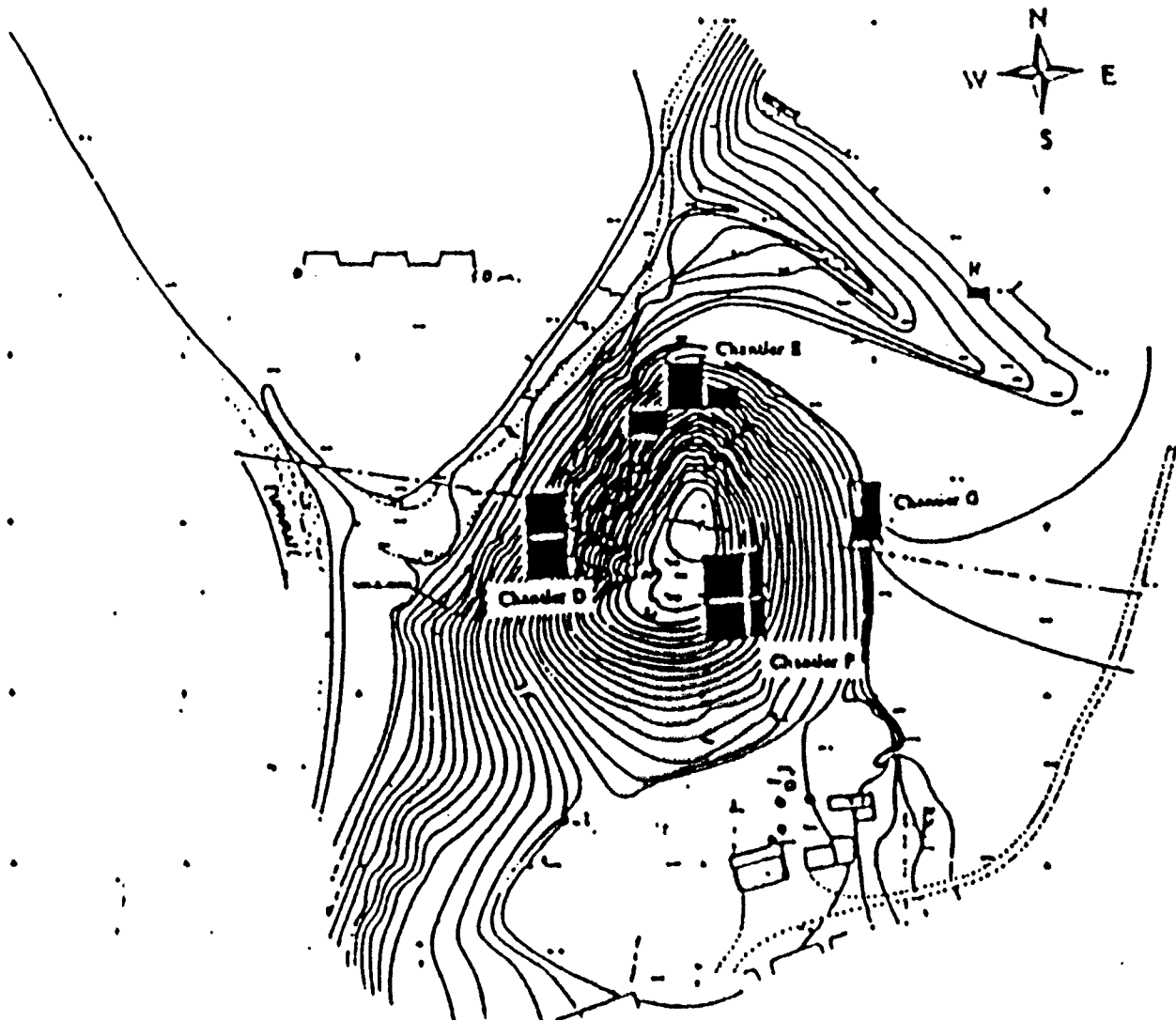


FIGURE 2. Topographic plan of Tell Shiukh Fawqani with excavation areas.

Topography and location of the Iron Age III remains

First and foremost it is relevant to examine in which location of the site the Operation G buildings were placed. The Iron Age III settlement has been uncovered on two different spots (Fig. 2). On top of the hill in Operation F and at the foot of the tell in Operation G. The two areas, though contemporary, are functionally very unlike: Operation F displays a well-built red mud-brick living quarter, inside which tablets, seals, glazed pottery, stone and iron weights were present. In Operation G all walls are either beige or gray mud-brick with no chaff. No luxury items have been recovered. Installations are plenty and all floors are simple earthen ones.

Also the presence of a cremation cemetery in the immediate outskirts of the site (Operation H), just 70 meters north of our buildings, proves that Operation G, probably close to a *wadi*, represented the outer fringes of the settled area during the Iron Age III period.

Operation G was not only placed lower and in the periphery of the dwelling with archive, but in order to build there, the area had to be terraced. This earthwork involved cutting, two and a half to three meter deep, in the foot of the tell, at least for a length of over 30 m, pre-

paring an area at the minimum seven meters wide. Beneath the cut run-off deposits a thick layer of stratified gravel, belonging to a high Euphrates Pleistocene bar have come to light. In order to retain this loose deposit, the layout of the complex was curving, like a dam, the inner wall a continuous structure to contain the outflow of the river pebbles lying behind.

It is important to stress the rather elaborate construction mode of the premises as we believe it displays a remarkable engineering effort. As will be shown, in view of the finds, the location and building strategy take on a meaning not apparent at first.

Stratigraphy and dating

Though we have been able to excavate fully the western, upward limit of the building, the eastern limit cannot be investigated. Some 20 years ago a bulldozer removed the eastern flank of the tell, thus damaging the outer part of our deposit.

The archaeological excavation encompassed 161 square meters. Of these, almost 90% were occupied by the building uncovered. The complex comprised at least six rooms, adjoining but not always communicating. Due to the damage made by the bulldozer cut, we cannot say whether the building extended much further to the east and we cannot definitely conclude that all the rooms belonged to one and the same building. This, however, seems likely. A partial extension to the north, south and east of the excavated features is certain in case of some rooms.

The *Level B* (Fig. 3) building was erected on a hardened mud and gravel floor, laid out on the terrace previously described, in *Phase 3*. Afterwards, some structural damage appears on the corner where Room c leans on Room b, likely produced by the pressure from the thick gravel layers. In the succeeding *Phase 2*, the building was repaired by introducing a *pisé* wall. In *Phase 1* the retaining walls of the northernmost room had collapsed and gravel filled the entire space. The other rooms witnessed a consistent change in use, with installations interred or changed, as if squatters carried out the maintenance of the architectural structure. After this latest phase, the whole complex was eventually abandoned.

The overlaying *Level A* utilized the terraced situation by erecting, on two levels, outdoor trodden floors, walls, structures, small ditches and pyrotechnological installations. In a constantly on-going reshaping of local features and structures, the two documented phases of this Level are functionally organized first in connection with the pyrotechnological installation in the south-west, then in connection with the one in the north-west.

The pottery seems to display an overall continuity throughout the two levels. The amount of chaff-tempered wares is 15%. Geometrically painted pottery increases from Level B to A but it constitutes at the maximum a mere 2% of the entire assemblage. Red slip a constant 1%. The date to be assigned to the inventory ranges from the very late eighth to the first part of the seventh century B.C. (Fig. 4–5).

Context and finds

More specifically, in *Level B Phase 2* the complete layout of the complex, such as we know it, functioned with all outwards accesses on the eastern side, the western facade being half interred. The roofed floor surface was at least 84-square meters. The excavated part of the building seems to have been made up of three units.

1. The southern block was comprised of two communicating rooms, of different size and with several installations. Room a, the longest one, had three stone and mud-brick installations. The two leaning against walls were a bench and a double basin respectively. The cen-

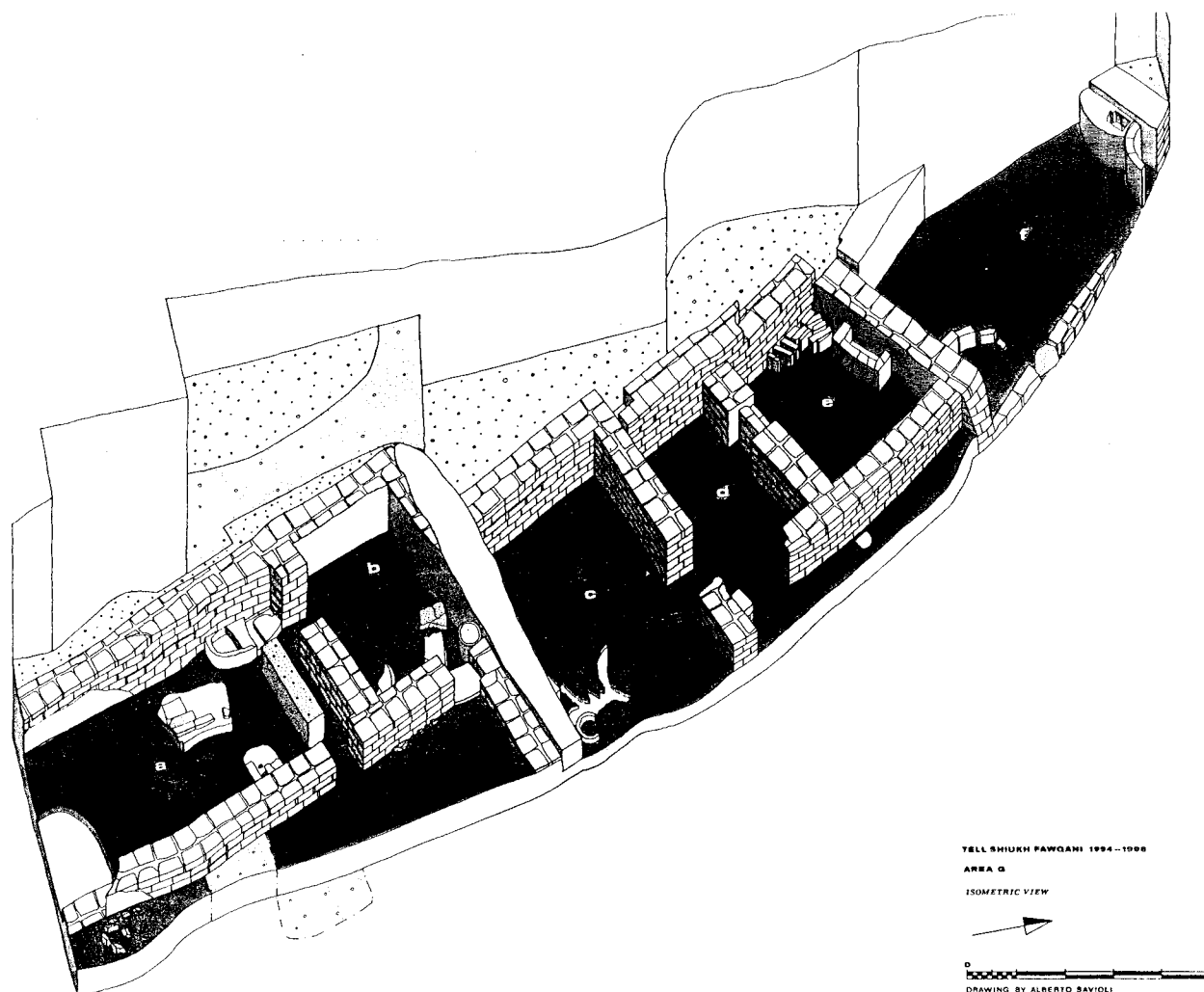


FIGURE 3. Plan of the Level B building in Operation G at Tell Shiukh Fawqani.

tral one, with built-in basalt and bricks displayed clear traces of soot. The *in situ* inventory of this room encompassed pottery, basalt tools and 19 dried clay bobbins.⁶ In Room b, a red mud basket and red clay plastering, remains of wood and mud shelves were uncovered.

2. The central block included Room c, d and e. Only d surely opened outwards. Room c, incomplete due to the damage caused by the bulldozer, had only a pyrotechnological installation. Along with a spindle-whorl, we found in this room half-finished and complete metal artifacts such as iron nails and sheets, small bronze rods and almost 30 slags. The adjacent, smaller Room d was not as rich in finds, but here too iron slags and bronze rods and a crucible were uncovered. Furthermore Room e, accessible only through d, featured a plastered, rectangular bin and a dozen mud-bricks stacked on the corner. Finds are similar to the assemblages from the two previous rooms though less rich, possibly due to the closing of the door which happened after some time.

3. The last one is Room f, long and fairly empty except for two opposite mud-brick installations, which resemble circular bins, unfortunately also cut by the bulldozer. On the interior side of the northernmost wall leans a mud-brick-working surface with a sink.

6. For a detailed discussion of these somewhat enigmatic objects see Luciani n.d.

TELL SHIUKH FAWQANI 1998

AREA G – Level B

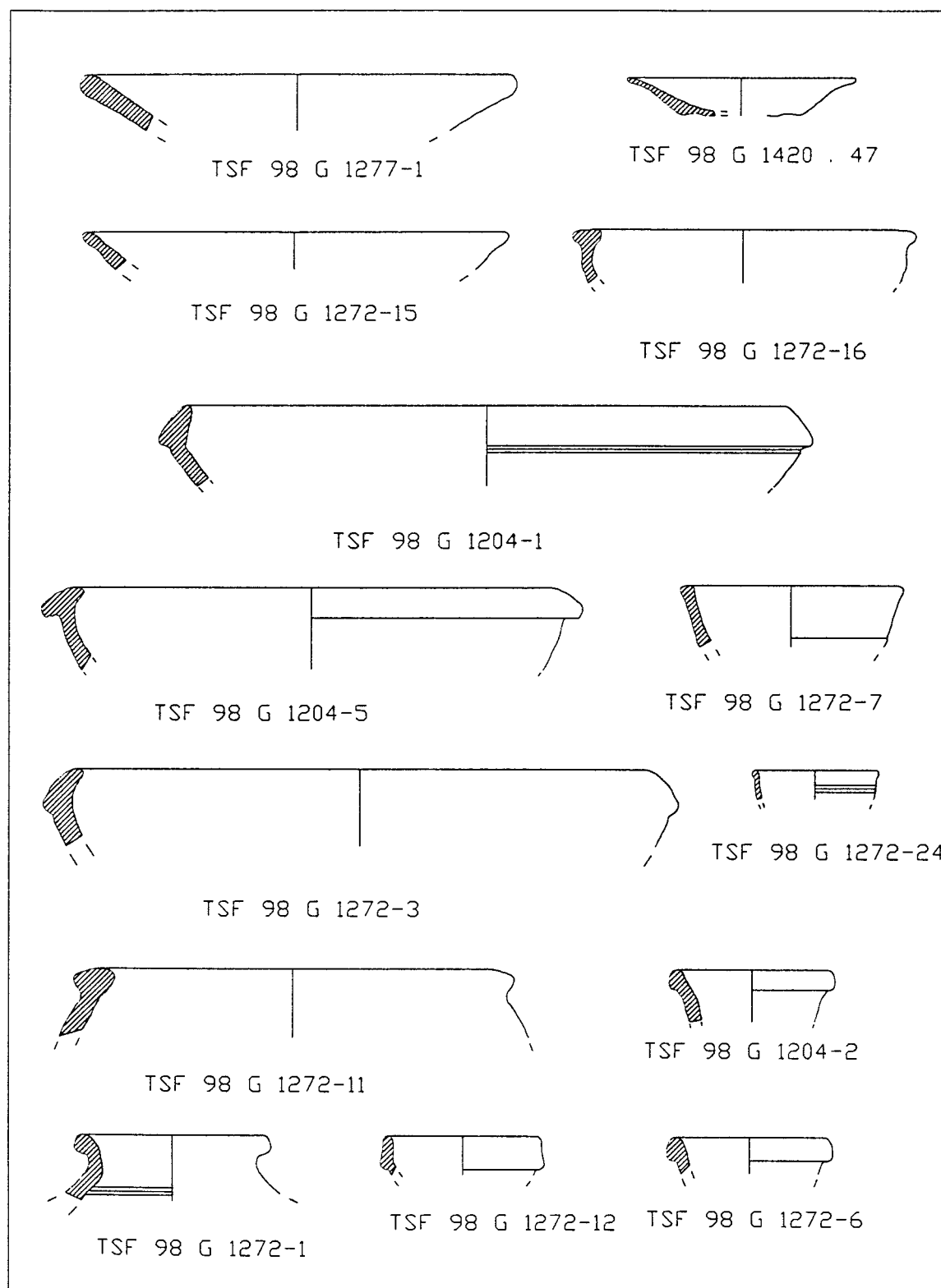


FIGURE 4. Pottery sherds from Level B, Operation G.

TELL SHIUKH FAWQANI 1998

AREA G – Level A

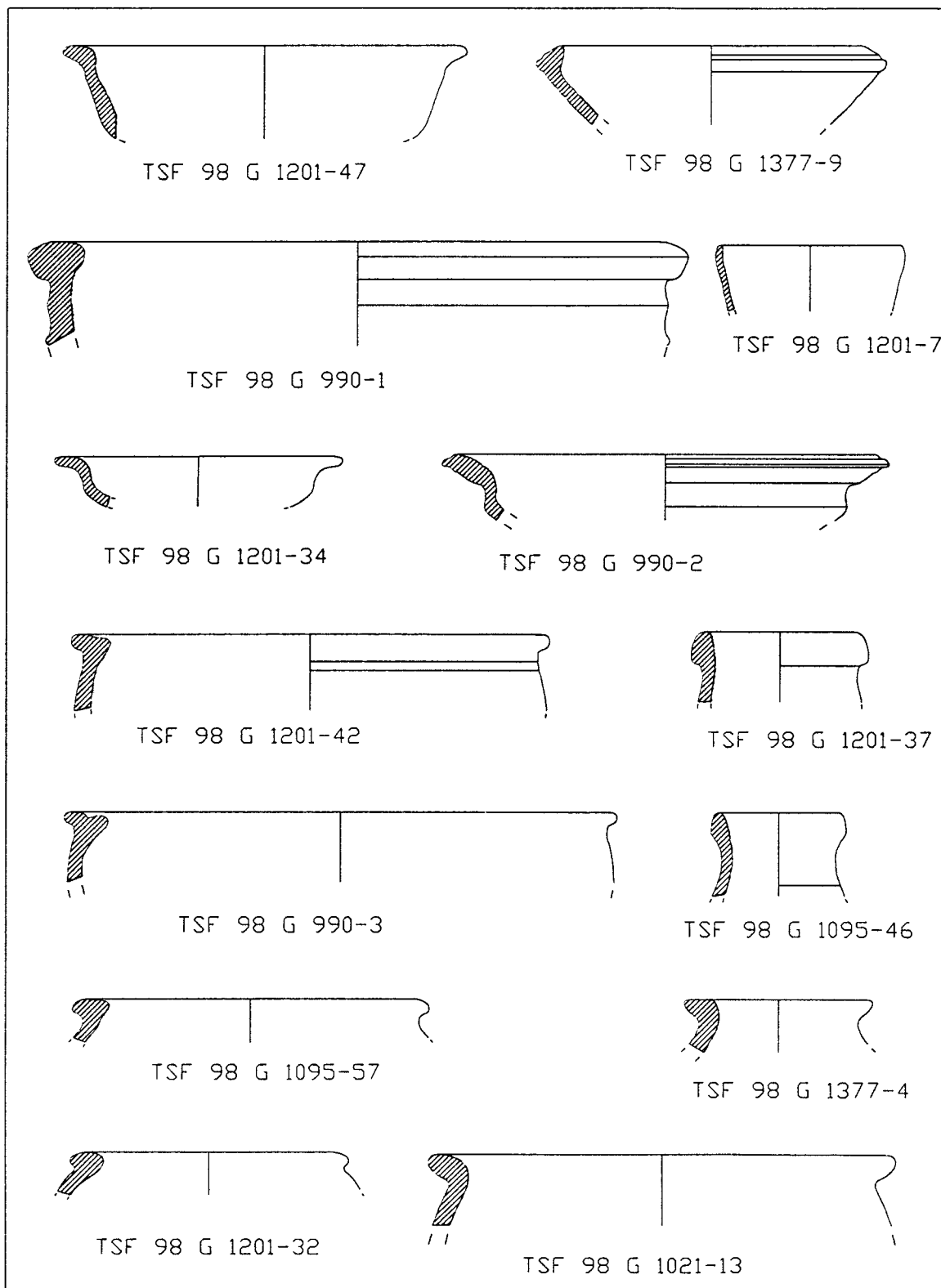


FIGURE 5. Pottery sherds from Level A, Operation G.

In the last phase of use of the complex, *Phase 1–Level B*, other finds came to light. These are an incised stone and some fragmentary terracotta figurines, which are also found in the overlaying Level A. Furthermore Room b was abandoned leaving numerous large limestone blocks, baked-bricks, a flower-shaped faience pendent and five large iron tools: plough-shares or better plough points, hoes or mattocks and a goad. They are well known from other Iron Age sites, both small centers and capitals.⁷ These tools need not all have been employed exclusively for agricultural activities, but could have been for brickmaking⁸ or possibly for earthworks such as quarrying or, more aptly, *ore mining*.⁹

The described architecture and finds correspond well with the expected layout and inventory of an Iron Age dwelling with workshop and storeroom but for the specific artifacts related to metallurgy.

Markers of metallurgical craft activities

In fact, the peculiarity of the Operation G building is the presence of iron slags, silicates, half-finished and finished metallic artifacts found in consistent—though different—amounts in all rooms and levels. In Level B, all phases considered together, over 60 specimens have been recovered and analyzed. 23% of these are metallic artifacts some half-finished. On the remaining 77% specific archaeometric analyses have revealed: (1) the existence of those oxidized iron slags, the normal by-product of cold/hot hammering activities on the iron bloom, (2) but also at least one slag in which the iron ore, magnetite, had not completely oxidized or turned into metallic iron, yet. Furthermore, evidence of (3) slags containing magnetite together with silicates has been identified. The latter, together with the (4) tapped furnace slags (pyroxenes), offer definitive proof of the existence, in Tell Shiukh Fawqani of the *in situ* primary reduction of the iron ore in order to produce a ferrous bloom to be hammered. We do not yet know whether steel¹⁰ was being produced, but analyses are being presently carried out.

Pyrotechnological installations

If the finds are unequivocal, the always lamented lack of data on iron-smelting furnaces from this period¹¹ can unfortunately not be filled on the basis of the Tell Shiukh Fawqani evidence. Furnaces are known from ethno-archaeological parallels in Asia,¹²

7. Pleiner and Bjorkman 1974: 296–98 and 307; Pleiner 1979; Curtis 1999.

8. As is visible in the definition of one of the artifacts produced by blacksmiths in neo-Babylonian times “*marru sa lebênu sa libitti*” in Zawadzki 1991: 40. As mentioned above, mud-bricks were stacked in the corner of Room e and in Room b numerous baked-bricks were recovered. Our slags, however, do not point to brick-baking operations in the vicinity of the Operation G premises.

9. It is noteworthy that Craddock (1995: 64 fig. 2.28) displays an almost identical object, a copper pick-head from Late Bronze Age Timna, as one of the tools used for mining copper from galleries (fig. 2.9). Similarly, Hamilton (*apud* Moorey 1994: 282) reporting about iron smelting near Trebizond, Turkey in 1842, writes “. . . ore was found everywhere about the hills near the surface. This they proved by scraping up the soil near their hut with a mattock, . . .”.

10. Such as in Notis et al. 1986.

11. Moorey 1994: 282 “The absence of archaeological information on iron-smelting furnaces in the Near East before the classical period continues to frustrate the proper study of this aspect of the subject”.

12. Piggot 1989: Fig. 5. Tylecote (1980: 211–12) does point to some Near Eastern cases but the evidence does not seem very precise.

Europe¹³ and Africa.¹⁴ Up to now, there seem to be only two archaeologically documented cases: Tell Yin'am¹⁵ and now also Tell Hammeh az-Zarqah¹⁶ in the Jordan Valley, although the latter is not yet fully published.

The walls of our Level B pyrotechnological installation (1276) have undergone specific analysis in order to determine the temperature obtained inside. It has turned out to have been not higher than 700° C. Furthermore, being this oven indoor and not very big, it is not likely to have been a smelting furnace. Its role might have been providing the required heat for annealing and hot hammering, forging or else, more simply, to smelt copper alloys, as evidenced by the presence in the adjacent and communicating room of a crucible.

Also in the site of Tell Dor, iron slags were found in association with crucibles for bronze objects.¹⁷ According to the archaeologists, this production dated to the Iron Age II C period, i.e., the seventh century B.C., during Assyrian rule on the site.

Similarly, in Khirbet el-Mshash/Tell Masos built-in mud-brick and fire installations with associated stone working tools point to the existence of a metallurgists' workshop, even though the reduction of iron ore did not take place there. It is interesting to note that the Tell Masos context can to a great extent be held comparable to the Tell Shiukh one. Also in the case of Tell Shiukh it can be considered that the structures we have exposed hosted smithing and hammering of blooms whereas reduction took place on the site, close-by but not directly inside the building.

Summing up, despite the fact that the outer part of the context has been destroyed it allows for the hypothesis that an outdoor furnace for smelting had existed in Tell Shiukh Fawqani, east of the building we excavated, even if it was not there for us to find it.

Ore

In cases where it has been tried, i.e., at the site of Tell Yin'am¹⁸ (late thirteenth century B.C.), at Tell Hammeh ez-Zarqeh¹⁹ and at Tell Afis²⁰ (eighth cent. B.C.) the possible original iron ore has been diagnosed as being hematite. Our analyses, however, show that the mineral involved in the smelting in Tell Shiukh was magnetite.²¹ This coincides well with the absence of fayalite, by-product of the olivine content in minerals such as hematite, limonite and peridotite. There is, therefore, strong evidence which lead us to exclude the above mentioned rocks. Besides magnetite, with a relatively high content in titanium, our samples contain plagioclase, pyroxenes and, as mentioned above, no fayalite.

We have not yet been able to sample iron ores in the broader region around Tell Shiukh. However, exactly the described composition, with the titanium trace element, is an association found in ultra-basic rocks, such as Gabbro, well attested just west and south-west of

13. Personal observation at the Moesgard Archaeological Museum in Aarhus, May 2000.f

14. Davidson 1997: 19, fig. 2.

15. Liebowitz and Folk 1984: 267–72. Stech-Wheeler et al. 1981: 261 at first criticized this interpretation but according to Notis et al. 1986: 276 and later to Muhly et al. 1990: 164 it looks as if the reading of this find as a furnace has now been accepted, although still with some slight doubt.

16. Veldhijzen 2000: 10.

17. Stern et al. 1997: 40–41.

18. Liebowitz and Folk 1984: 267.

19. Veldhijzen 2000: 11.

20. Ingo et al. 1992 and 1994.

21. Turkish magnetite sands have in other cases been indicated as a good source of iron, Muhly et al. 1985: 74.

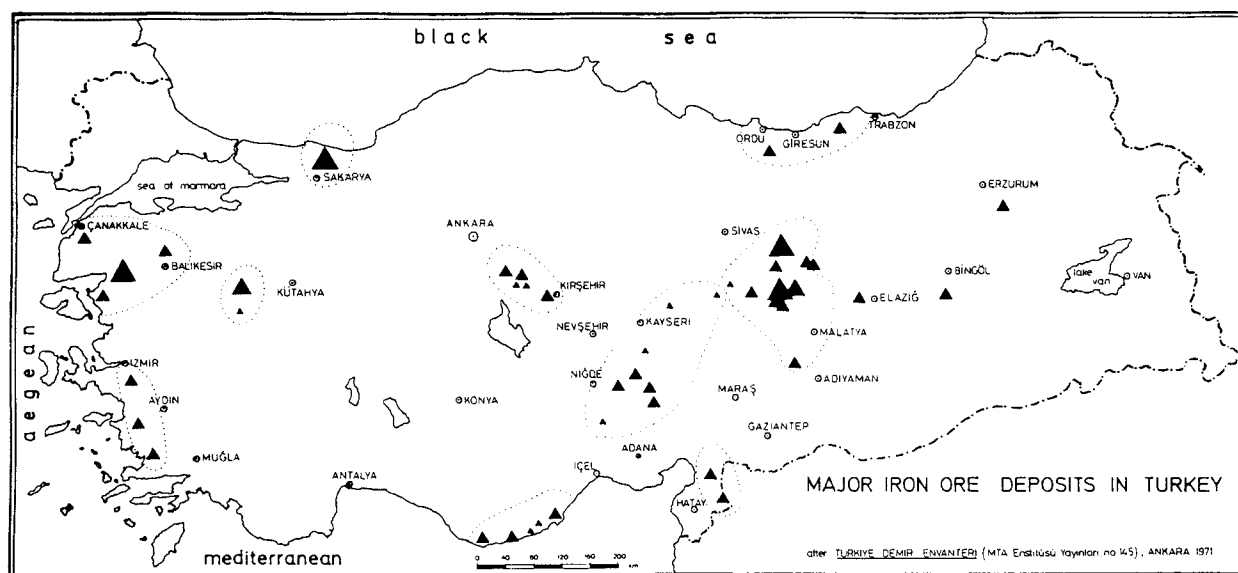


FIGURE 6. Localization of the iron ore deposits in Turkey (from Muhly et al. 1985: 72 fig. 1).

Gaziantep, in the hinterland of the Iskenderun Gulf/Amanus region in Turkey²² (Fig. 6). This area is connected to the Tishreen region through the Sajur-Euphrates waterway system, allowing for easy transportation.²³ It is not known whether the singled out iron ore deposit functioned at this time,²⁴ but surely amongst those compatible with our analysis, this is the one geographically closest to Tell Shiukh Fawqani.

Fuel

Notwithstanding the discussion as to the real ratio of fuel to iron ore in order to obtain iron,²⁵ surely smelting required ample supplies of specific wood. Charcoal samples are undergoing examination in order to determine species and clarify provenance. Those samples associated with slags are strongly battered and the shape of their vases rather altered. So, if it's not possible to precisely pinpoint the exact species, it is obvious that we are dealing with hardwood,²⁶ the only sort that can produce heat sufficient to attain reduction/smelting. Furthermore, overall preliminary charcoal analysis from Operation G points to the existence of deciduous oak remains in higher amounts than in any other operation in Tell Shiukh Fawqani, contemporary or not. Oak could very well have been used as combustible for reduction of the iron ore due to its properties in reaching the required high temperatures. This oak vegetation today still grows not very far removed upstream, along Turkish segments of the Euphrates.²⁷

22. As visible in the Geological Map of Turkey 1989 (1: 2.000.000) and also indicated in Muhly et al. 1985: 72 fig. 1.

23. If, as is reported by Moorey (1994: 280), only 30 to 40% of the ore were unwanted material, then transportation before roasting/reduction does not appear a completely anti-economic procedure.

24. But it is well attested for other historical periods, Maxwell-Hyslop 1974: 148–50.

25. Moorey 1994: 281 points to a 8: 1 ratio, but see the discussion in Muhly et al. 1990: 163.

26. P. Giuliani, to whom I am indebted for this information, has undertaken the analysis.

27. Preliminary information friendly provided by G. Willcox.

Summing up, though we are sure that iron ore reduction took place in Tell Shiukh Fawqani, we have the finds but not the related furnace to prove it. This possibly lay outdoor, well exposed to major winds,²⁸ just east of our complex, in the area that modern agricultural works have bulldozed.

Though the analyzed material is more limited, in the site of Tell Afis, basing on slags from an eighth century floor, iron-smelting activities have been reconstructed as well.²⁹ To my knowledge, Afis and Shiukh are the only sites where it has been tested through analysis that iron ore smelting occurred in situ, at a relatively great distance from the iron ore.³⁰ It remains to be asked to which extent this depends on the state of research or represents a real historical fact.

However this may be, our data seems to contradict the traditional wisdom that the initial working phase, i.e., reduction of the iron ore, must have always occurred close to or at the ore/metallic district³¹ (and not on the site itself). It is surely significant that Tell Shiukh Fawqani is located on the Euphrates, a—or better—the major waterway along which both fuel and iron ore could be floated downstream, from close-by, though not adjacent, ore-rich areas. Thus, distance and transportation³² did not constitute a serious drawback for the Tishreen, a region not directly supplied with ores or fuel, and nonetheless rich in metal-working tradition, many centuries old.³³

Metal-craft activities

A closer look at the excavated context can help clarify which kind of metallurgy was carried out in Tell Shiukh Fawqani. As mentioned above, 91% of all slags were recovered in the central block of the complex, a large majority in Room c. From the same room come also 83% of the metallic half-finished artifacts: both iron and bronze. In the adjoining rooms we found a crucible for bronze and four worked pieces: cut and polished goat and ox bones.³⁴ Therefore, it appears that the central part of the building complex, Rooms c and d, hosted metal-working activities which included hammering the ferrous bloom, forging iron artifacts, finishing them with bronze and bone fittings.

Though we do not have specimens of bimetallic finished artifacts,³⁵ it is known that the same workshops were active in working both bronze and iron.³⁶ This has been proven by ar-

28. Possibly some more detailed specific analysis could enable us to say whether smelting in Tell Shiukh Fawqani was carried out in a natural draft furnace or one where draft was aided by (goat) skin bellows. As of now, we do not know the answer. In any case, the areas at option for the localization of the furnace are well exposed to local winds.

29. Ingo et al. 1992 and 1994.

30. The difference in environmental setting of the two sites must, however, be stressed. While Tell Shiukh Fawqani lies on the Euphrates, transport to Tell Afis must have occurred mainly overland. This must surely have implied greater costs for the same productive activity.

31. As held, e.g., by Moorey 1994: 280 and 282; Moorey 1995: 56. An observation similar to ours is instead registered, though in a European context, in Vidale 1992: 233.

32. Archaeo-zoological evidence for camel from Operation G (Vila n.d.) clearly points also to overland routes.

33. For the 3rd millennium B.C. evidence, see Montero Fenellós 1997.

34. For a similar assemblage of heterogeneous materials and artifacts, see Vidale 1992: 236–249.

35. For a review see Waldbaum 1982: 331–2.

36. Moorey 1994: 285. Furthermore Pleiner and Bjorkman 1974: 303 write “In the texts, blacksmiths are often distinguished from coppersmiths”, “However, it would be erroneous to imagine that the classification by professional name meant a strict distribution of work” and “most smiths had to master a broader field of operations”.

chaeological evidence starting at least with Late Bronze Age Palace workshops, such as the Kamid el-Loz³⁷ one, or in Tell Yin'am,³⁸ Taanach and Megiddo,³⁹ to cite only a few.

As much as in Taanach,⁴⁰ where metallurgy co-existed with other (domestic and cultic⁴¹) activities, also in Tell Shiukh the investigated premises are to be interpreted as multifunctional. Nonetheless, judging from the area of the building exposed, the question on the co-presence of cultic activities is difficult to address in the case of Tell Shiukh Fawqani. However, as has been shown for Tell Mishrife, an association between domestic-cultic activities and bronze metallurgy in an early Iron Age building has clearly been documented.⁴² Therefore, it cannot be excluded that this might have been the case also in Tell Shiukh Fawqani, in an area of the building not exposed.

As mentioned above, if smithing was taking place in Operation G in Tell Shiukh Fawqani, several other activities are to be envisaged, as well. Dwelling, handicraft, weaving, storage—both of foodstuff,⁴³ as pointed out by palaeo-botanical analysis, and of metal tools,⁴⁴ as proven by our finds. Collection of broken or damaged metal artifacts for repair must have also been relevant.

Metallurgists

From travelers' accounts we know that in some cases local supplies of charcoal were used to smelt iron and farmers had their own small forges to make agricultural tools. In other instances smelting and forging was a seasonal activity of local ironworkers, otherwise farmers and shepherds.⁴⁵ On the contrary, in the Taanach region and in the case of Megiddo, iron working may have been a seasonal activity carried out by non-resident smiths.⁴⁶

Published epigraphic sources on metallurgists, being mostly records coming from capitals, point to the role of blacksmiths as being in close connection to organizations such as the palace or the temple or urban contexts in general.⁴⁷ Texts found in Tell Shiukh do not offer

37. Frisch et al. 1985.

38. Liebowitz and Folk 1984: 271. The existence of crucibles, with the comparison to Spanish specimens, clearly points to activities related not only to iron but also to bronze (Liebowitz and Folk 1984: 271 n.15)

39. Stech-Wheeler et al. 1981: 256.

40. Stech-Wheeler et al. 1981: 257.

41. This has been put into relation with the suggestion that Cypriot copper production in the Late Bronze Age was under the protection of gods, administered by religious organizations (Stech-Wheeler et al. 1981: 257). For divine patrons of metal-working see Pleiner and Bjorkman 1974: 303 n. 2 and Lambert 1991.

42. Luciani 2000b; in press; Abdulrahman et al. n.d.

43. Final definitions of quantity and quality of the preserved seeds and bones through palaeobotanical and archaeo-zoological analyses will help answer the question of whether this storage of foodstuff was undertaken for domestic purposes or to be used as pay for the metallurgic labor-force.

44. For an example, although from a different context, see Vidale 1992: 267–282.

45. Maxwell-Hyslop 1974: 153 and n. 63, also on Anatolian itinerant smiths.

46. Stech-Wheeler et al. 1981: 256.

47. Pleiner and Bjorkman 1974: 303; Joannès 1993: 100–101; Zawadzki 1991. Pleiner and Bjorkman 1974: 304 n. 15 cite Johns 1901: No. 7 (now Fales 1973: 65–68) as the only text having nothing to do with the Palace and attesting common use of iron in the seventh century B.C., because of the 3: 1 ratio of blacksmiths to coppersmiths. However, this document comes from Nineveh and stems from the official administration, as well. Furthermore, it carries no geo

conclusive evidence, but they're not wholly studied yet. However, our site represents a context so different from that of State-administered capitals that parallels are unlikely.

Although type, amount and context of our metallurgical slags point to in situ deposition, we did not find an enormous pile of slags, the expected by-product of long-lived smelting operations. This, however, might depend on the partiality of the investigated area, on the multifunctional use of the building, as well as on the continuous cleaning up surely carried out in the rooms to preserve an efficient functioning of the premises.

Anyhow, the large engineering effort—explained above—made in order to build and maintain the architectural complex of Operation G where metallurgy took place, would speak against non-resident smiths in Tell Shiukh Fawqani.⁴⁸ On the other hand, seasonality or part-time occupation might have been intrinsic to metallurgic activities, carried out only at times when the agricultural cycle allowed it.

Finally, the need for consistent labor force⁴⁹ does not seem to have been a constraint in Tell Shiukh Fawqani, where iron does not appear mass-produced.

Conclusions

Starting with the late thirteenth century, middle-Assyrian records from Dur Katlimmu attest to the presence of one settlement called ^{URU}*Marina sa sadê*. It has been shown elsewhere how this toponym can be identified with the subsequent Burmarina,⁵⁰ the name of Iron Age Tell Shiukh Fawqani.⁵¹ Correspondingly, Operation E features the only remains of a settlement on the Upper Euphrates with middle-Assyrian shapes in its pottery repertoire dating to the very late thirteenth century and the beginning of the twelfth century B.C.⁵²

Assyrian royal records in the ninth century, both Assurnasirpal II and Shalmaneser III,⁵³ register again the site, the latter calling it Burmarina. Their raids in the region of Bit Adini started by establishing commercial contacts. Through military presence an effort was made to extend tribute outside traditionally controlled regions. Thus, contact with iron producing areas increased. Under these two kings, iron came from regions adjacent to the Upper Euphrates⁵⁴ as booty and tribute to royal storehouses and workshops.

In the seventh century B.C. only the neo-Assyrian State (and Urartu⁵⁵) had the capacity to set up the necessary industrial infrastructure for extensive exploitation of iron.⁵⁶ Reconstructing the existence of a centrally administered production for the Tishreen region is difficult on the basis of the Tell Shiukh Fawqani evidence alone. Definitely, good control and

graphic indication and can therefore not be attributed with certainty to the Harran region or to a surely non-urban context.

48. But does not in principle exclude that the activity was short-lived and not continuous over more generations. For some comparisons on continuity in pottery production areas versus rapid restructuring of metallurgic productive areas, see Vidale 1992: 264–65.

49. Piggot 1989: 70.

50. Luciani 2000a.

51. Fales 1999.

52. Bachelot and Capet n.d.

53. Grayson 1996: 15 (A.O.102.2: 34).

54. Moorey 1994: 281.

55. Piggot 1989: 69.

56. Possibly this is also to be understood in the general frame of the overall expansion of metal-craft attested starting with the 2nd millennium B.C. and (Piggot 1989: 68) “the increase in socio-economic importance of metal and its production”.

integration of communication ways and trade routes, both overland and especially waterways favored the development also of local production—even on small settlements.

The metallurgy of iron had become a viable activity on sites such as Tell Shiukh Fawqani, a small but repeatedly attested settlement within the Assyrian Empire. Tell Shiukh's role was very specific as a non-urban, non-palatial productive site acting as middle-man between metallic districts and Assyrian ruling capitals.⁵⁷ Obviously its location on the main transportation route of the ancient Near East—the Euphrates—would guarantee the pivotal role between large North Mesopotamian urban centers and metal sources in Anatolia, where the iron metallurgy tradition⁵⁸ had developed and had obviously survived the fall of the Hittite Empire.⁵⁹

In sum, Tell Shiukh Fawqani offers for the first time conclusive evidence of the northern Mesopotamia Assyrian route to iron sources in Anatolia.

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57. It is, in some ways, comparable to the role of Iron Age hilly country in the Veneto region in trade of textiles and metals between mountain areas and valleys as interpreted by Vidale 1992: 231.

58. Moorey (1995: 59) clearly establishes a connection between the extension of Hittite imperial authority into Syria (Ras Shamra/Ugarit, Kamid el Loz/Kumidi and Tell Atchana/Alalakh) and the increase of textual evidence for iron production in palace workshops. Note, however, that Muhly et al. 1985: 81–82 underlines the technological priority of the Hittite iron industry while not going as far as calling “them innovators, monopolists or disseminators”.

59. Moorey 1994: 286.

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Worked Bones at Tell Mardikh-Ebla. Objects and Tools from the Early Bronze to the Iron Ages: Preliminary Remarks on Typology, Function and Archaeological Context

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Abstract

The bone industry had a peculiar role in the craftsmen activities at Tell Mardikh-Ebla since the Early Bronze Age. Together with meaningful examples of figurative bone and ivory inlays (mainly dating from the Old Syrian Period, ca. 2000–1600 B.C.), more simple objects and tools were manufactured for common people and were especially used for the textile production (i.e., spindle-whorls, spindles, awls, combs, spatulae).

A wide chronological time-span covers the Eblaic sequence, allowing to understand the evolution of some typologies as well as the presence or the absence of some specific tools during the main phases of the site (Early Bronze IV–Middle Bronze I–II–Iron Ages). A preliminary typology is presented, and a functional and contextual analysis for the materials found in the Royal Palace G (EB IVA, ca. 2400–2350 B.C.) is illustrated with distributive plans, tables and graphs.

Introduction

The bone industry had a peculiar role especially in the Neolithic and Chalcolithic cultures of the ancient Near East, where bone implements and objects, together with the lithic assemblage, cover several diversified functions, before the introduction of metallurgy. However, albeit with a specific orientated production, bone manufacture is attested through the ages as a permanent handicraft activity. During the Early Bronze Age we can see a substantial continuity with the previous periods, with a wide range of tools (awls, needles, blades, pointed bones, spatulas, etc.) and ornaments (pendants, amulets, pins, sticks, etc.), whereas during the 2nd and 1st millennia B.C. there was probably a trend towards a dichotomy between high-specialized manufacture of valuable objects, such as inlays, incrustations, toilet-parures, linked with the ivory industry, and partially domestic production of tools for spinning and weaving activities (spindle and spindle-whorls, shuttles, pin-beaters, needles, etc.).¹

1. Cf. Moorey 1994: 112–114. An useful exhibition catalogue with good illustrations of worked bones from the Palestinian regions, dating from the prehistoric periods to the Roman and Medieval ages, has been recently published: Ayalon and Sorek 1999.

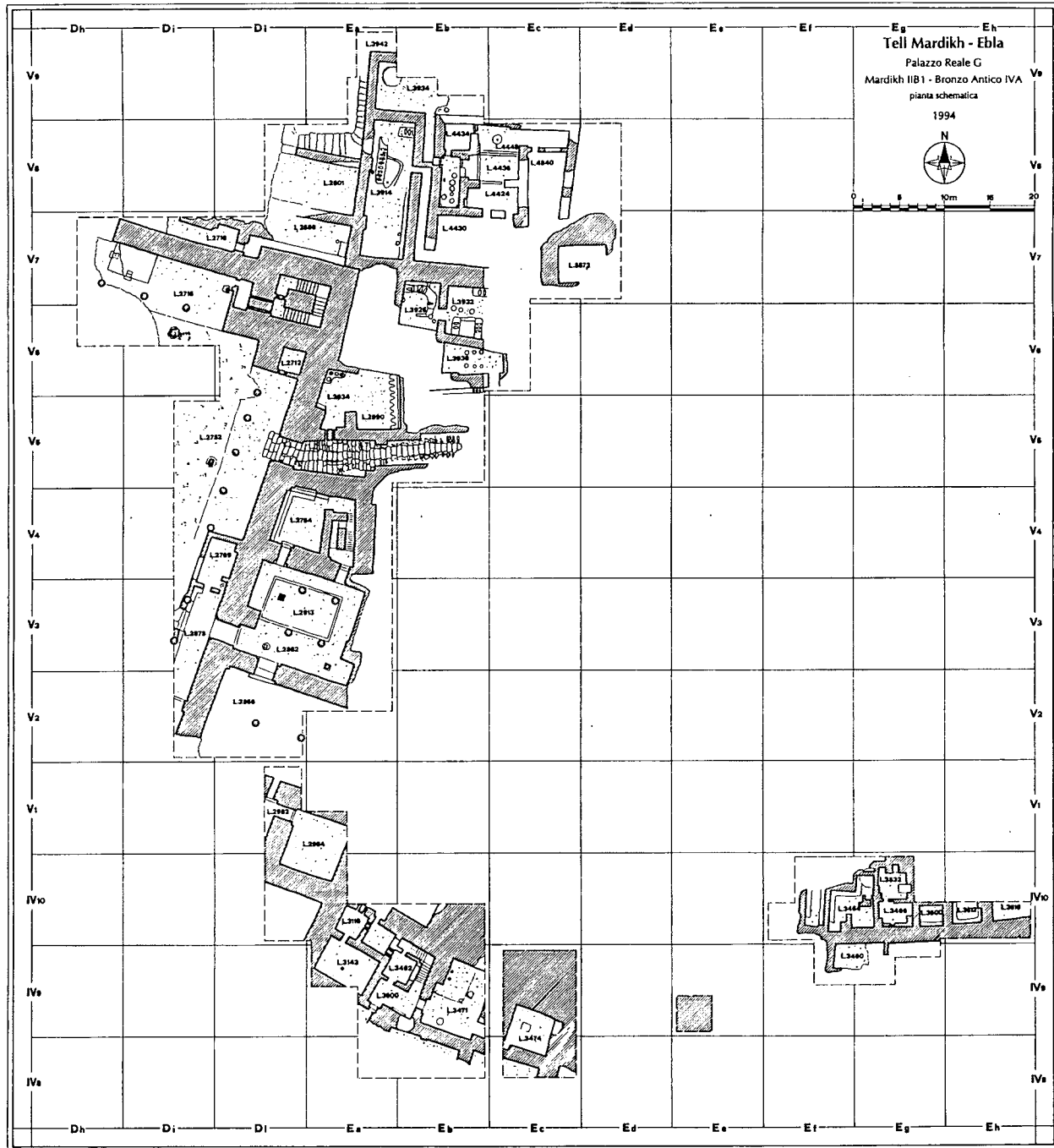


FIGURE 1. Royal Palace G, Ebla. Schematic plan.

In this respect the corpus of bone materials from Tell Mardikh-Ebla is quite interesting because of the wide chronological time-span of the Eblaic sequence, allowing to understand the evolution of some typologies as well as the presence or the absence of some specific tools from the mid of the IIIrd millennium B.C. till the end of the Persian period (ca. 2400–335 B.C.); it offers also the opportunity to investigate different socio-economic situations, from the high Early Syrian period with the Royal Palace to the Persian village centered on a fortified residence, at the end of the sequence of the site.²

If it is self-evident that there is an inequality of the archaeological evidence, nevertheless it seems important to compare the bone industry during the different chronological periods, trying to understand the characteristics of this handicraft in relation to a wide cultural perspective in Inner Syria, which is almost a *terra incognita* for a history of craftsmen activity from an archaeological point of view.³

A preliminary typology and a brief discussion of the most important categories is here presented on the base of a sample of 275 items from the 1964–1997 excavations.

Only in some cases (especially awls, needles and spatulas) it is possible to identify the original animal bone. Diaphysis of long bones and metapodials are the part of the mammalian skeleton more suitable for the working of objects and implements such as toggle-pins, punches and awls, whereas flattened bones (ribs, scapulae) were used for peculiar implements such as the spatulas or for pendants; The ‘head’ or articular condyle of bovine or ovicaprine humerus and femur was cut to obtain spindle-whorls.⁴

Working of animal bone, antler or tusk in the ancient Near East is still well known only for the prehistoric period (Stordeur 1988b) or for highly developed ivory carving techniques during the end of the 2nd and the 1st Millennium B.C. (i.e., Caubet and Poplin 1987; Krzyszkowska 1990). Virtually unknown are working places or activity areas in the Syro-Palestinian regions, with a handful of scanty evidence from Ashkelon (Wapnish 1991) and possibly from Tell Abu al-Kharaz in Jordan (Fischer and Herrmann 1995). It is therefore difficult to reconstruct the level of specialization of this ancient craftsmanship starting only from the ‘quality’ of the finished product as or from the operational sequence.

Awls and Needles

Several different pointed tools were found in the levels dating from the EB IVA and MB I–II, usually defined in the literature as punches, awls or needles. We consider here as ‘needles’ only the implements pierced at one end, and as ‘awls’ the objects not pierced with a pointed edge.⁵ These tools were made from fragments of diaphysis of long bones or metapodials of mammals (especially sheep and goat), sometimes with the distal end (epiphysis)

2. For the relative and absolute chronology of the Eblaic sequence see Matthiae 1989a: Figs. 9–10, 26; Matthiae et al. 1995: 86–95.
3. The study of the handicraft activities during the historical pre-Hellenistic periods in Syria and Mesopotamia is still lacking analytical and general works. The volume published by P. R. S. Moorey (1994) fills a documentary gap, and represent a basic reference for a technological approach to ancient materials, but it might be completed with contextual analysis and studies by specific regions and/or periods (see Mariani 1984; Merluzzi 1997). Better is the situation for Middle Asia and the Indus Valley where a wide range of archaeological researches related to ancient craftsmanship has been conducted since the mid Sixties: see i.e., Tosi 1984 and Vidale 1992 for the theoretical framework and now Vidale 2000 with an up-to-date bibliography.
4. The reconstruction of the *chaîne opératoire* depends on the kind of category of bone objects: generally speaking working of bones is a reduction process from the original animal bone with several steps to shape it into the finished item. We can consider a sequence of operations including cutting and splitting, smoothing and polishing, turning, drilling/scribing/rouletting, clamping and riveting, and perhaps softening and moulding: see MacGregor 1985: 55–72; Wapnish 1997. For a methodological approach to the concept of operational sequence see now Vidale 1998: the scholar underlines the problem of the ‘linearity’ of this concept originally elaborated and used by the French school and proposes some fundamental ‘deviations’ of the processual interrelated steps. The bone industry and its relationship with prehistoric technology is the object of several studies: see i.e., Campana 1987; Stordeur 1982; 1984; 1988; 1993.

present. The pointed end shows usually evident signs of wear and the surface of the object is frequently smoothed or polished. The awls must be considered as tools which could be utilized in many ways: for piercing leather, for pegging out skins, and for working several soft materials. Some of the well-finished pointed tools and pierced needles, more carefully executed and with worked head and decorations, could have been toggle pins.

We have distinguished the 'shorter awls' (type A), the 'larger awls' (type B), and the awls or pointed tools (type C) with smaller shaft usually with arched section towards the bunt end (very similar to the needles but without piercing) (Fig. 2: a–b). Two different kind of needles are present: the first with arched section of the shaft opposite to the pointed end (type A) and the second with more regular rounded shaft with circular section (type B) (Fig. 2: c–d).

Pointed tools are peculiar of the EB IV levels,⁶ albeit some pieces can be related to the MB age, testifying for to their development and use also during the Old Syrian period side by side with more elaborate bronze tools and implements (i.e., chisels, burins, drill-heads, points and blades).

Sticks and Pins

Pins were usually used to fasten clothing, but it is also possible that some of them could have been employed as hair-pins. Unfortunately the distinction between toggle-pins and hair-pins is hardly recognizable for the pre-classic periods. Bone decorated sticks with a pointed end which can be considered 'pins' are attested at Ebla especially during the EB IV with several finds.

These objects could also be cosmetic sticks (*kohl*-sticks), especially those with flattened head. It being very difficult to define two distinct groups, we prefer to maintain the general terminology of 'sticks-pins' which includes both the possible functions.

Several elements suggest the existence of a specialized production during the Early Syrian period at Ebla: some pins are carved to very high standards with few standardized types; there is a marked difference between pins and other utilitarian implements, roughly executed; the percentage of this class of bone objects in the Royal Palace G shows that they were used by persons at the highest level of the society; they represent the typology more commonly attested during the EB IV (87 specimens).⁷

We have distinguished 4 main types (Fig. 3):

- (A) sticks/pins with worked head, hourglass- or spatula-shaped, pierced immediately under the head; no incised decoration; 10/15 cm in length.

conditioned framework of 'functions'. The '*classification multiple*' proposed by D. Stordeur for several prehistoric bone assemblages (i.e., at Khirokitia, Ganj Dareh) has revealed the importance of this methodological approach (Stordeur 1984; 1985; 1993): this classification, which provided for several separate steps of analysis, combined with each other, is surely necessary when we study a wide corpus of implements with several diversified functions.

6. A similar situation can be observed at Hama, where several bone implements are present during the J phases, but they strongly reduce during the H-G phases: cf. Fugmann 1958: Figs. 64: 3E876, 65: 3D325, 85: 3B727, 93: 3B733, 106: 5D45, 5E590, s.n.F11 (for Hama J8–1) and Fig. 132: 7A521, 5E618 (for Hama H5–1, G3–1). For the pre- and protohistoric periods see Thuesen 1988: 84–85 (phase L), 168–172 (phase K).

7. Very few Early Syrian parallel are actually published, perhaps suggesting a regional orientated and specialized production of ornaments: cf. Fugmann 1958: Fig. 65: n.4,R2, 74: 3E875 (similar to our type B), 85: 3B734 (resembling our type A). See, on the contrary, the variety of EB II–III pins from Tarsus (Goldman 1956: 313–314, Fig. 438).

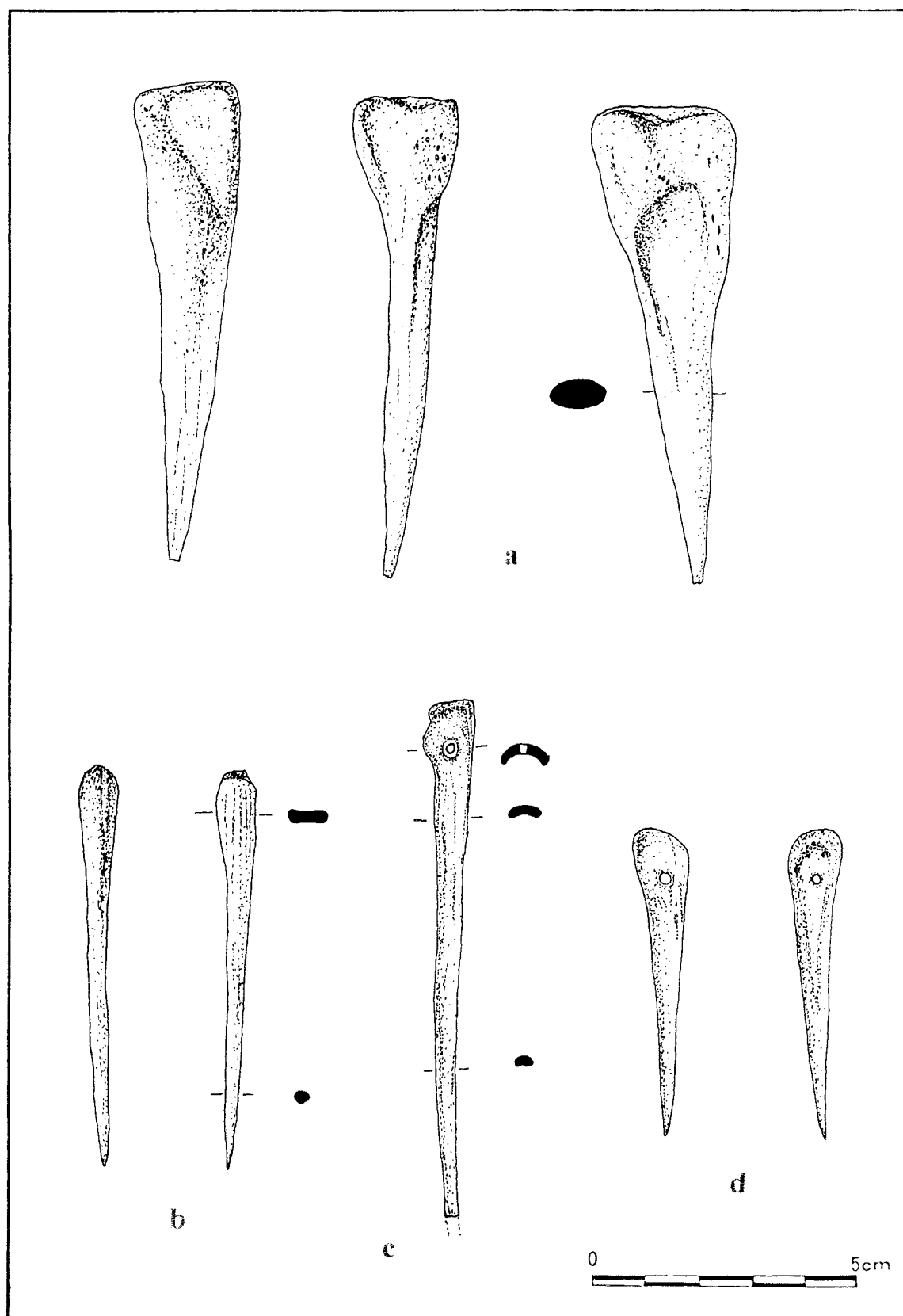


FIGURE 2. Bone awls and needles from Royal Palace G and Building P4, Ebla (EB IVA, ca. 2400–2300 B.C.): a) awl type A—TM.92.P531; b) awl type C—TM-84.G.150; c) needle type A—TM.76.G.592; d) needle type B—TM.94.P.403.

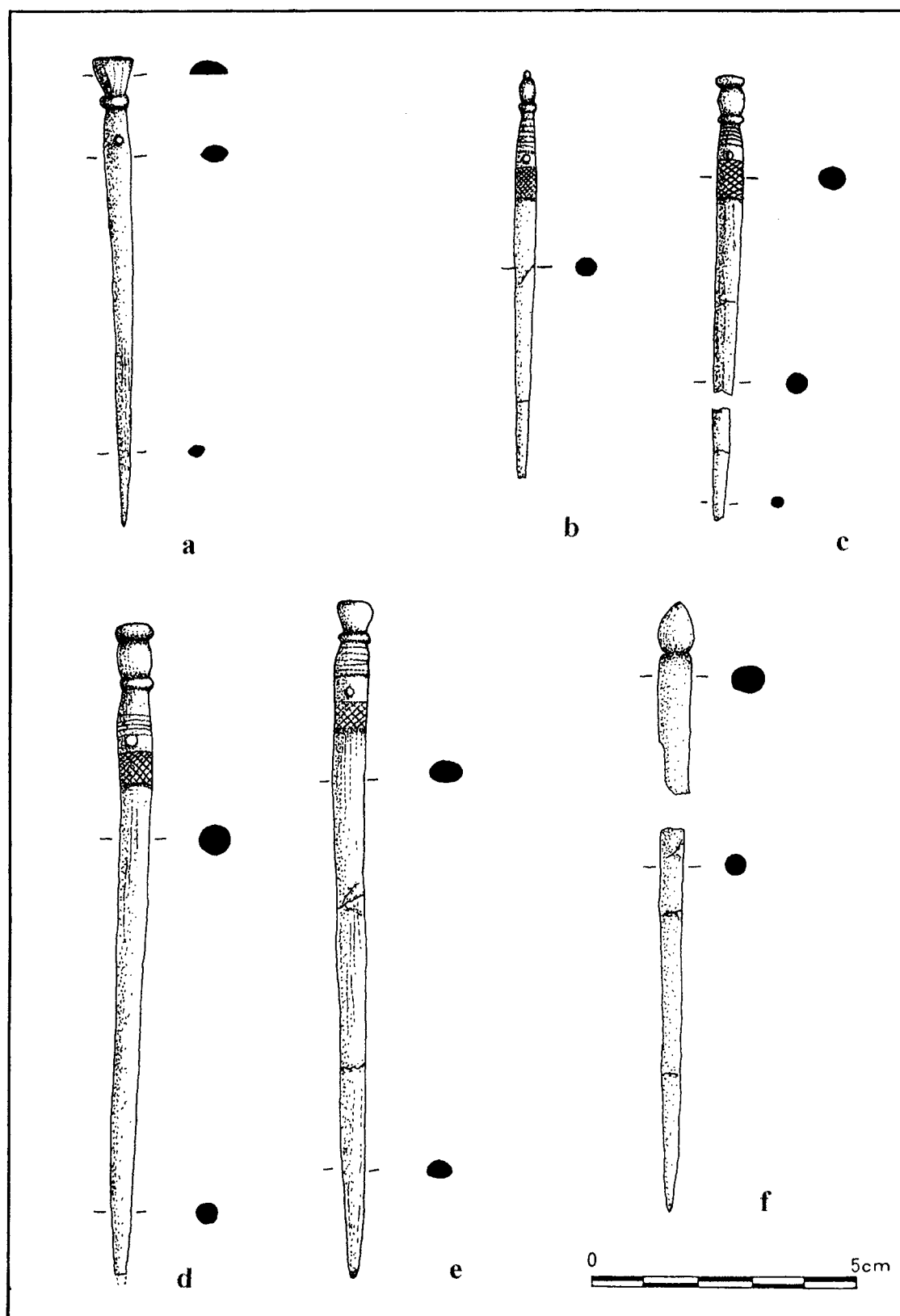


FIGURE 3. Bone decorated sticks and pins from Royal Palace G and Building P4, Ebla (EB IVA, ca. 2400–2300 B.C.): a) type A—TM.75.G.479; b-c) type B—TM.94.P.644, TM.82.G.223; d-e) type C—TM.91.P.715; TM.91.P.716; f) type D—TM.84.G.111.

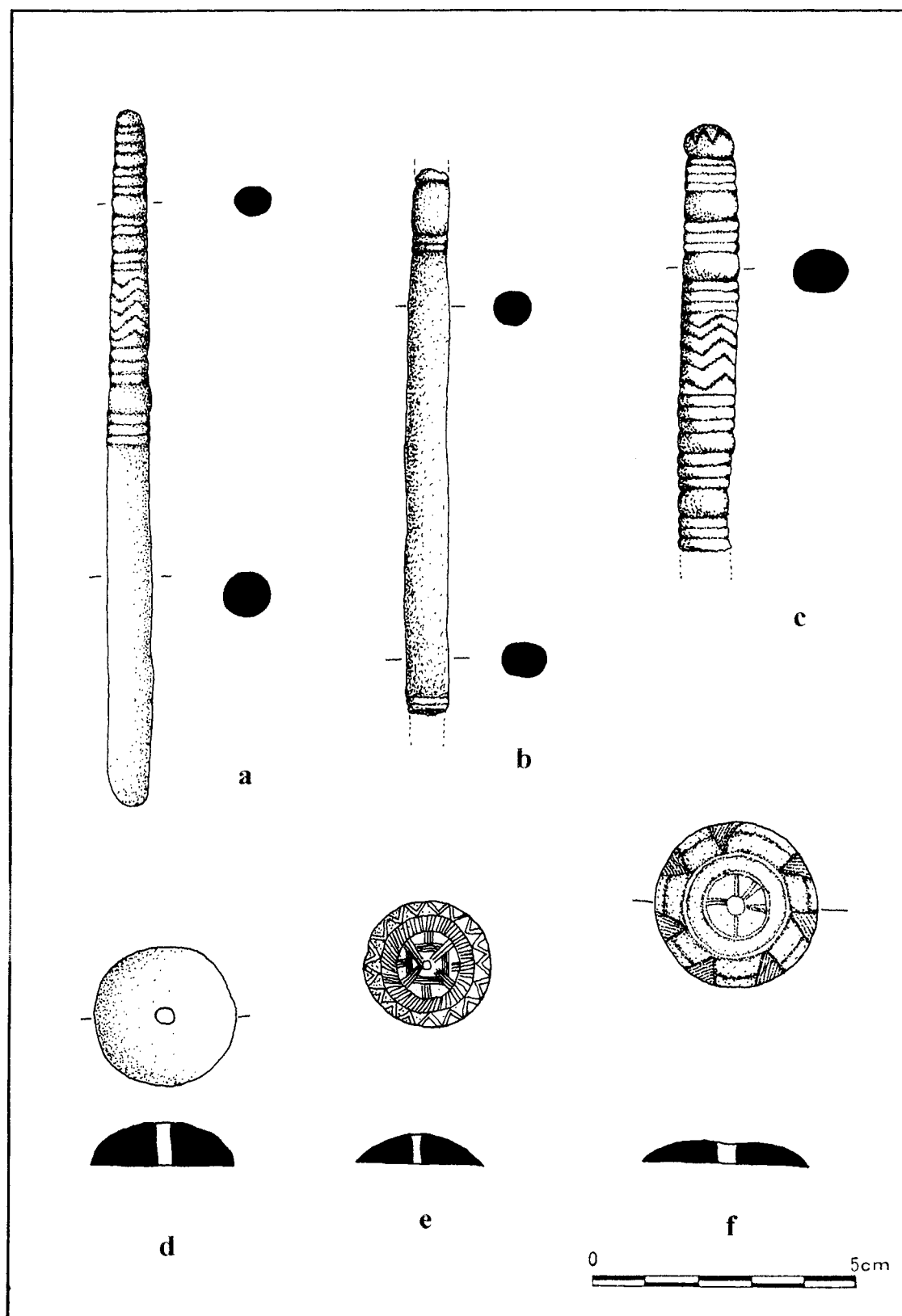


FIGURE 4. Bone spindles (Iron III—Persina, ca. 720–335 B.C.) and buttons/spindle-whorls (MB II, ca. 1800–1600 B.C.): a–c) spindles—TM.90.G.437, TM.91.P.263, TM.91.G.77; d–f) whorls—TM.95.V.454, TM.94.P.539, TM.83.G.271.

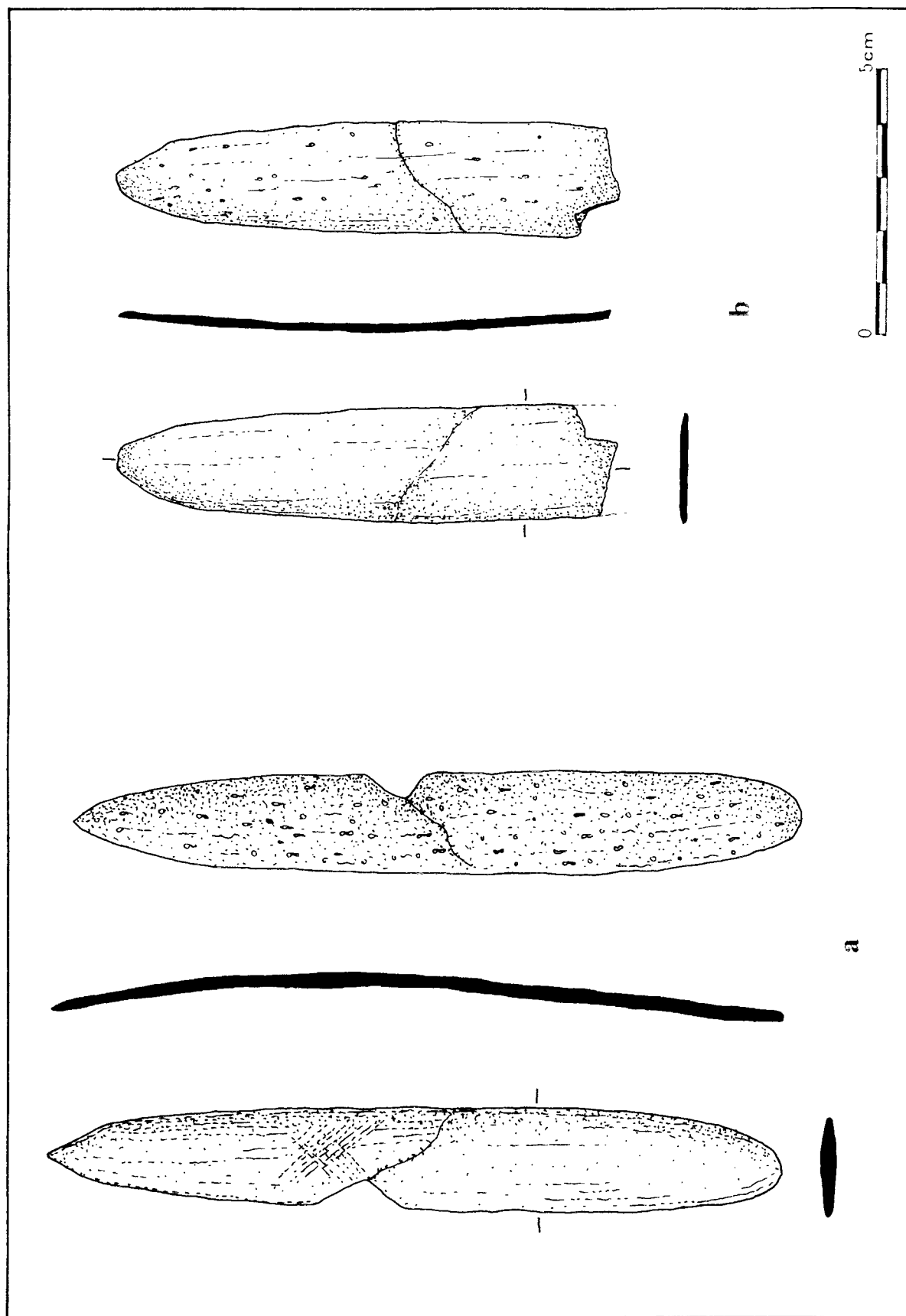


FIGURE 5. Bone spatulas (Iron II–III—Persian, ca. 900–335 B.C.): a–b) TM.99.G.550, TM70.E.422.

- (B) small sticks/pins with worked head, globular-shaped; incised decoration with parallel lines and crossing lines; usually pierced in the part between the two patterns of lines; ca. 10 cm in length, with a circular section of ca. 0.4 cm;
- (C) sticks/pins similar to B but longer, ca. 20 cm in length with a circular section of ca. 0.6 cm;
- (D) pins with simple rounded head, pierced or unpierced.

The archaeological contexts are dating mainly to the EB IVA: several pins were found in the Royal Palace G (see Tab. 1)⁸ and in Building P4 (L.5021, L.5214, L.5220, L.5247, L.6162, L.6264, L.6278) directly on the floor levels (Marchetti-Nigro 1994–95: 14, figs. 21–22). Few pins can be related to the MB and IA strata, when this kind of luxury item was mostly in bronze or precious metals (Middle and Late Bronze age) and then was replaced by iron or bronze fibulae (Iron Age II–III and Persian-Hellenistic periods) (cf. Matthiae et al. 1995: nn. 268, 296, 302–304, 392; Mazzoni 1992).

The distribution of the objects found in the destruction levels of Royal Palace G (ca. 2400–2300 B.C.) seems to indicate that they were scattered in all the excavated wings of the building (Central Complex, Southern Wing, Administrative Quarter) without any particular concentration of finds (see Tab. 1 and Fig. 1). The southern unit of the Central Complex, which was a sector devoted to the storing of preservation jars and vessels of different sizes (Dolce 1990: 124–125, Figs. 5–8; Mazzoni 1994: Tabs. 3–5), shows worked bones in four rooms (L.3464, 3466, 3500, 3512). It is interesting to point out that some sticks/pins were discovered also in the storerooms and inside the rooms devoted to primary activities related to the grinding of cereals (L.3914, 3926, 3932) (Dolce 1990: 125, Figs. 8–9).

The dispersed pattern of distribution should be related primarily to the relation of the objects with upper storey (levels of collapsed mudbricks structures; not indicated in Tab. 1) and, in the case of finds over the floors, as the result of the abandonment of the items during the sack of the palace (see Tab. 1). One beautiful pin with rounded head was found in the archive's room L.2769, and it is possible that this object was used as a stylus.⁹

The lack of worked discarded fragments indicates that working places are not present in the excavated area; the room with more objects is L.3914 with 4 sticks/pins and one awl, but it is unlikely that worked bone items were stored inside this place, which is a large rectangular room equipped with plastered bench and grinding facilities still in situ (Matthiae 1989a: 76, Fig. 22), and it is more probable that the finished items were lost by their owners during the final sack of the city.

Table 1: List of bone objects from Royal Palace G (floor levels)

ROOMS	OBJECTS
L.2715	1 pin type A (TM.75.G.422)
L.2712	1 pin type C (TM.75.G.396) - 1 awl type C (TM.75.G.373)
L.2716	1 pin type B (TM.75.G.64)
L.2752	1 pin type C (TM.75.G.1126)

8. For the Royal Palace architecture see especially Matthiae 1976; 1977; 1978; 1982; 1985: Pls. 3–24; 1989a: 69–94.

9. The bone 'pin' TM.75.G.726 (type D) is 13.7 cm long with a rounded section (0.4–1.0 cm), an upper holed edge (diameter 0.3 cm) and a pointed end.

Table 1: List of bone objects from Royal Palace G (floor levels)

L.2764	1 awl type B (TM.75.G.378)
L.2769	1 pin type D (TM.75.G.726)
L.2866	1 pin type B (TM.87.G.96) - 1 needle type A (TM.76.G.592)
L.2877	1 pin fragm. (TM.76.G.660) - 1 object fragm. (TM.76.G.415)
L.2890	1 pin type B (TM.76.G.440) - 1 object fragm. (TM.76.G.502)
L.2913	1 pin type C (TM.87.G.156)
L.3464	1 pin type B (TM.82.G.223) - 1 pin fragm. (TM.82.G.280)
L.3466	1 pin type B (TM.82.G.274a) - 2 pins fragm. (TM.82.G.274b-c)
L.3500	1 pin type C (TM.83.G.7)
L.3512	1 pin type B (TM.83.G.143) - 2 pin fragm. (TM.83.G.129; TM.83.G.146)
L.3600	1 pin type A (TM.83.G.412)
L.3914	2 pin type B and C (TM.85.G.294a-b) - 2 pin fragm. (TM.G.294c-d) - 1 awl type B (TM.85.G.214)
L.3926	1 pin type C (TM.85.G.265)
L.3932	2 pin fragm. (TM.85.G.275; TM.85.G.293)

Strips and Inlays

It is here taken into consideration only the category of strips of worked bone, leaving out ivory and bone inlays with figurative themes related to the Egyptian or Old Syrian styles and iconography.¹⁰

Incised bone strips decorated with geometric patterns were found in archaeological contexts dating from the Middle Bronze IIB (ca. 1700–1600 B.C.): several small fragments were stored in one room of the Northern Palace P in the Lower Town and some very fragmentary pieces come from the Northern Fort on the rampart. Finally, three remarkable complete strips were found inside Fortress V, on the floor of L.6516: two of them show double zigzag lines with dotted circles and the third smaller strip has only a row of double dotted circles (Fig. 6; Peyronel 2000: Fig. 15). The inlays were found together with three stone balance weights and remains of burnt wood, which suggest the original presence of a wooden box containing the weights (Ascalone and Peyronel 1999: 120–121, Figs. 8–9).

These worked bone objects were largely represented especially in MB Palestinian settlements and cemeteries (Liebowitz 1977), but several specimens were found in Western and Inner Syria (for instance at Ugarit, Alalakh, Byblos and Tell es-Salihiyeh), and probably they were present also in more distant sites, as suggested by the finds of Kültepe, Alishar, ‘Usiyeh and Haradum (Oguchi 2000: 86). The strips decorated small boxes or pieces of furniture, as demonstrated by the complete examples found in the funerary assemblages and in particular in the Megiddo and Jericho tombs.¹¹ The inlays found in Fortress V at Ebla are well preserved in spite of the burning of the bone and offer a quite interesting evidence, witnessing that decorated boxes were commonly employed also as containers for small tools or weights.

10. For a preliminary evaluation of the ivory carving craftsmanship at Tell Mardikh during the MB period see Matthiae 1989b; Scandone Matthiae 1990; 1991.

11. See i.e., Guy 1938: Pls. 108, 111, 113; Loud 1948: Pls. 192–194; Kenyon 1960: 496, 510–513, 534, Figs. 215, 222–223; 1965: 355, 462, Figs. 143, 264.

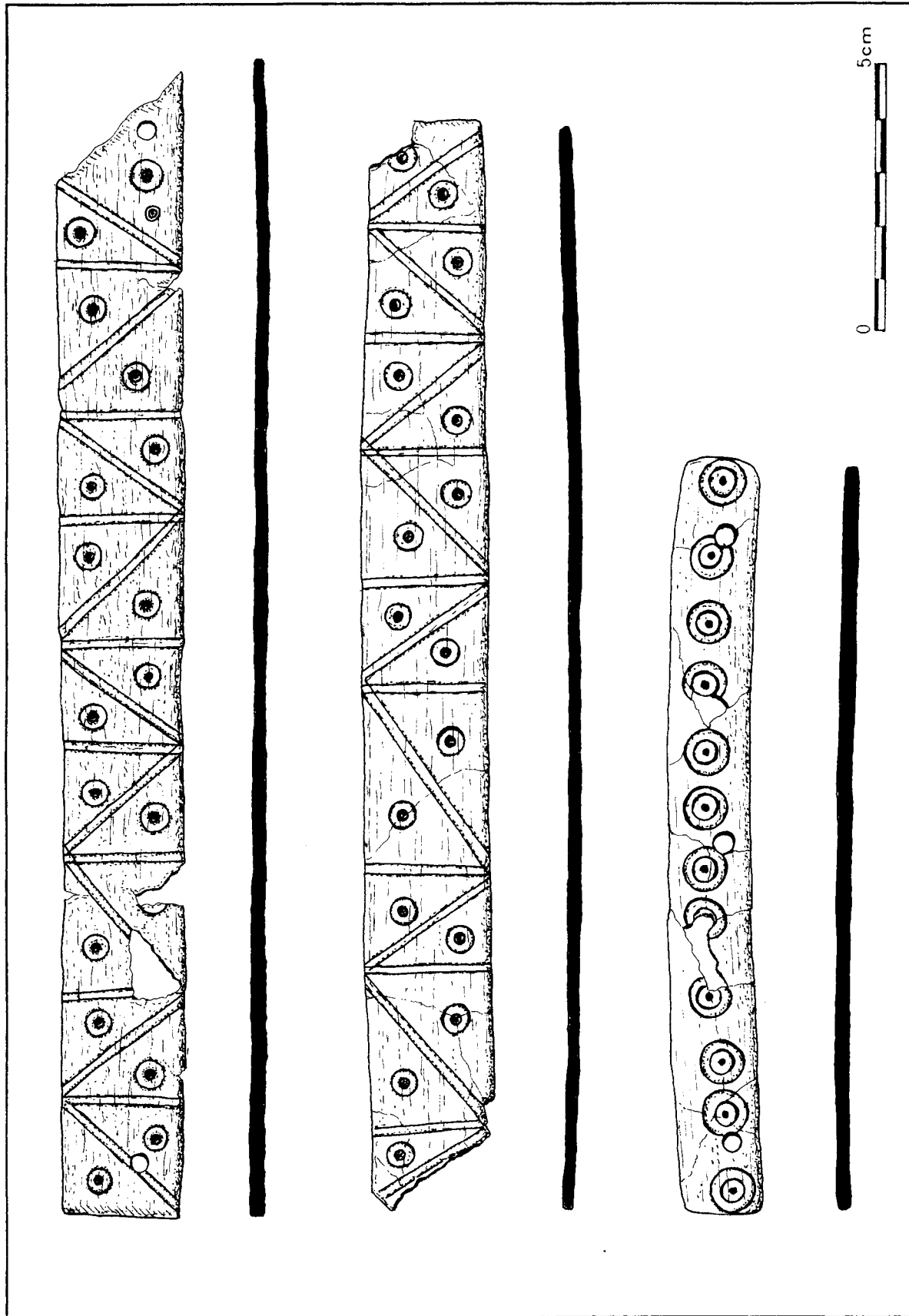


FIGURE 6. Bone decorated strips from Western Fort, Ebla (MB IIB, ca. 1700-1600 B.C.).

These specimens, together with the group of ivory inlays with themes related to the Egyptian milieu discovered in a room (L.4070) of the Northern Palace (Matthiae et al. 1995: nn. 372–376), testify to the existence of a highly developed bone and ivory carving handicraft production at Tell Mardikh during the Middle Bronze Age, which probably replaced the stone and shell figurative miniature statuettes and inlays of the Early Syrian period.

Spindles and Spindle-Whorls

Under the name ‘spindles’ are collected all the rods with circular section, showing specific decoration and shaped edge, which allow us to compare them with ‘true’ spindles from other contemporary sites, where they were found together with spindle-whorls still mounted on the stick.

Generally speaking these sticks or rods could be regarded also as different objects (i.e., pins, ‘scepters’), but the hypothesis linking them with spinning activity seems to be the better one. It is also possible to consider some of them as distaffs, as recently pointed out by S.M. Cecchini on the base of iconography known from Neo-Hittite sculptures and relief (Cecchini 1992).

Bone spindles came from strata dating to the Iron Age and Persian Period (Mardikh VB–C–VIA) (Fig. 4: a–c), during the earlier periods only bronze spindles are actually attested, but it is possible that they existed also at the end of the MB period if the interpretations of bone domed whorls as fly-wheels should be right (see *infra*).¹²

The rod is usually decorated with complex pattern of geometric incised designs (chevrons, double or multiple lines, herringbone patterns) or with simple lines towards the edges. The head is sometimes worked to resemble a stylized pomegranate or flower.¹³ The Eblaic specimens have no hollow terminal part or tenons to fix the spindle-whorls or the different parts of the object, albeit most of the finds are fragmentary.

Decorated rods, which resembles our specimens were found in Palestine from the LB II, continuing into Iron Age, with examples from the Levant, Anatolia and the Aegeum (Barber 1991: 62–63; Belfanz 1995). Several ‘spindles’ were discovered in Megiddo tombs as funerary gifts: some of them were complete, showing without doubt the spinning function: they consist of a decorated shaft divided in two parts with two whorls set with the flat faces together, mounted on the rod with tenons fitted into holes in the ends of the two pieces of the shaft (Guy 1938: Pl. 84: 1 from Tomb 1122; Lamon and Shipton 1939: Pl. 95: 38). This is quite a sophisticated and unusual typology, albeit more simple bone/ivory spindles without tenons with the same kind of incised decoration were also part of the textile equipment.¹⁴ They occasionally have an elaborated edge shaped as a pomegranate, which can be either a separate part with a hollow in the base or the true edge of the shaft.¹⁵

From Inner northern Syria, very similar bone/ivory spindles were found in the Iron Age levels and tombs at Hama (Riis 1948: 173–174, Fig. 217; Riis and Buhl 1990: 205, 207–208,

12. Two remarkable bronze spindles come from the *favissa* F.5238 in Ishtar’s sacred area on the Northern Lower Town: Marchetti and Nigro 1999: 275, Fig.14.

13. The symbolic value of this motif for the ancient cultures of the Near East is testified to by its presence in secular and sacred art from the Bronze age onwards: cf. Muthmann 1982.

14. See the LB specimens from Megiddo (Guy 1938: 170, Fig. 175: 6, Pls. 84: 1–2, 95: 49–50, 100: 29–30, 156: 13, 157: 18; Lamon and Shipton 1939: Pl. 96: 10–12, 21); Lachish (Tufnell 1940: Pl. 20: 23–28; 1958: Pl. 28: 7, 13–15); Minet el-Beidha and Ras Shamra (Gachet 1987: 249–250, 260, 263–264, Pl. 4: 39–40 with the whorls); Enkomi (Courtois 1984: nn. 508, 519–522, Figs. 18: 1–3).

nn. 736–744, Figs. 96–97)¹⁶ and Tell Afis (Cecchini 1992: Figs. 1–2): some of them are complete, mostly between 20 and 25 cm long. At Hama they were also discovered in funerary context together with bone whorls, testifying to the same funerary habit attested at Megiddo during the previous centuries.¹⁷

The bone spindle-whorls from Ebla were found in archaeological contexts ranging from the EB IV to IA, testifying to their use since the earlier periods, albeit the majority came from the MB levels (Fig. 4: d–f). They are always domed, with the surface highly polished, weighing from 1 to 20 g, with a very small central hole (0.2–0.4 cm); the more lighter specimens (from 1 to 3 g) could be considered also as buttons or some kind of decoration for furniture.¹⁸

Small objects with rounded or circular shape were usually cut from the head of humerus or femur bones, which have a very regular rounded surface, but in the case of whorls with flattened dome it is also possible that the shape could have been obtained through the smoothing of other kinds of bone fragments. The specimens of the Middle Bronze age are particularly interesting because of their decoration and context. One whorl was discovered inside the *favissa* F.5238 (Fig. 4: e), located in the so-called Square of the Cisterns at the foot of the Acropolis, in the sacred area of Ishtar, together with two bronze spindles and hundreds of vessels, precious items and votive objects (Marchetti and Nigro 1997; 1999).¹⁹ It could be considered a ritual offering to the deity, suggesting the symbolic value of these implements, which were usually placed also inside women's burials in later periods.²⁰ The peculiar geometric decoration with hatched triangles, lines and circles, incised on the flattened dome, is very rare, and also plain whorls were sporadic finds among Syro-Palestinian settlements during the MB period.²¹

Spatulas

These objects are distinctive features of the later periods of the settlement; they were found only in archaeological contexts dating from the Iron Age II to the Persian/Hellenistic Period (Fig. 5). They are probably all made from mammalian rib bones of sheep and goat (but it cannot be excluded that, occasionally, some of them were cut from long bones). They are

15. See i.e., the Megiddo examples (Lamon and Shipton 1939: Pl. 96: 21) for the LB II, and the Hama (Riis 1948: Fig. 217A) and Tell Afis spindles (Cecchini 1992: Fig. 1) for the IA. An interesting ivory pomgranate with a Hebrew inscription, of an unknown provenance (but possibly from Jerusalem), is the upper end of a spindle's shaft, albeit some scholars has considered it an 'enigmatic' scepter linked with Solomon's temple of Jerusalem (Avigad 1990). For hypothetical IA 'spindles' from the City of David at Jerusalem see Ariel 1990: 140–141, BI177–183.
16. 17 from the citadel (especially from the Building V), phase E2 (destruction level of the 720 B.C.) and 34 from the funerary deposits of the cemeteries (especially Period I, but also II–IV).
17. Several funerary assemblages show stone or bone whorls together with fragments of bone/ivory spindles, albeit the fly-wheels were never still mounted on the stick: The majority of the specimens should be dated to the beginning of the IA I (Period I) (see for the chronology Riis 1948: 191–204). Particularly interesting the deposits GVIII 537 (2 whorls, 1 fragm. of whorl, 2 fragm. of spindle, 2 spatulas, 1 bone comb) and GXII 142 (1 bone whorl, 3 stone whorls, 5 fragm. of spindle, 1 spindle's edge), both related to the Period I of the cemetery (Riis 1948: 239, 254).
18. For the methods of spinning and twisting and for identification criteria of fly-wheels see Barber 1991: 41–51 with related bibliography.
19. F.5238 is a small and low domed wheel-like object, 3.2 cm in diameter with the surface

smoothed and polished on both sides along their length, though sometimes they were also smoothed laterally. The inner matrix of the bone is often still visible on the dorsal side, but the surface is always smoothed. This kind of surface treatment is necessary for the use, it is a requirement of the function, and it cannot be considered as a result of wear.²² The specimens are all fragmentary and they are ca. 2 cm large with a width of ca. 0.2–0.3 cm.²³ The most common shape is pointed at one end and rounded at the other, straight-sided or tapered slightly toward the butt end.

This kind of implement is widely attested in Syria and Palestine since the Iron Age, with only sporadic finds from other regions and from other periods.²⁴ Several scholars have discussed spatulas, suggesting very different functions,²⁵ with a more general consensus for an use as weaving implements (Bliss 1898: 40; Tufnell 1953: 397; Doyen 1986: 49–51; Bennet and Blakely 1989: 315–316; Ariel 1990: 129–130; Cecchini 1992: 16).

We consider the functions related to the clothing industry the more suitable: in this respect, the main questions are how this textile instrument was used, and which were the specific operations it performed? The spatula could in fact be considered as:

- a pin-beater: a kind of beater-in instrument employed in loom weaving to pick up the threads of the weft, obtaining a more dense fabric, partially used also for piercing as indicated by the pointed edge, which can show signs of wear;
- a loom shuttle or bobbin: in this case the tool, with the fiber wound around it, passes through the sheds, which are the openings formed by manipulation of the warp, raising alternate threads;
- a pattern-stick: the spatula is used to separate and raise the threads, weaving a complex pattern of textile, but also to remove dirt or to loose little knots during the weaving operations.

If it is possible that this implement had all the three functions, we consider the third one as the more probable and the second one not very satisfactory, because of the absence of a hole at one edge, taking into account also the fragility and the blade shape, both unsuitable elements for a good work of a shuttle.²⁶

It has been underlined that the appearance of the spatulas corresponds with the adoption of new fibres (cotton and wild silk) in Syria-Palestine during the VII sec. B.C. (at the be-

20. It is interesting to point out the presence of a meaningful spindle-whorl in agate from the so-called 'Tomb of the Cisterns' (Matthiae et al. 1995: n. 429), one of the three princely hypogea found under the Western Palace Q, dating to the MB IIA (see Matthiae 1980a; 1980b; Matthiae et al. 1995: 180–187 with up-to-date bibliography): as the whorls from the *favissa*, it stresses the ideology linked to spinning fibers, related to the women's sphere of 'domestic' activities. The symbolism of some textile tools is directly shown several centuries later, during the Neo-Syrian period, by the iconography of princesses and goddess with spindles and/or distaffs on architectural relief and monumental sculpture (see Cecchini 1992: 11–12).

21. Cf. i.e., Ariel 1990: 121, BI20; Mallet 1988: Fig. 32: 12–13; Finkelstein et al. 1993: 237, Fig. 9.9: 6. Whorls/buttons with engraved double semicircles with points at the centre were quite popular at Cyprus during the Late Cypriote period: this decoration is found also on the spindles, covering part of the rod as a characteristic 'scale' motif: see i.e., Courtois 1984: Fig. 18: 13 (whorl) and Fig. 18: 1–2 (spindles). Therefore, some Ugarit specimens with the same pattern of geometric decoration must be considered an important clue supporting relationships between the island and the northern Syrian coast during the end of the LB (see Gachet 1987: pl. 4); see also (for a possible Anatolian connection) Goldman 1956: Pl. 349: 104.

22. Cf. for the same opinion Ariel 1990: 129. This consideration is essential for a correct understanding of the object's function.

23. Only two examples are completely preserved: they are 9 cm and 13.6 cm in length.

ginning of the Assyrian control), which were used in weaving textiles on the vertical warp-weighted loom (Doyen 1986: 48; *contra* Cecchini 1992: 13–14). However, it is now ascertained that the new type of loom was attested from the beginning of the Iron Age, as testified by clay loom-weights (especially doughnut- or reel-shaped) found in several settlements from levels dating from the Iron I onwards (Shamir 1996: 140–142), and that spatulas were also, albeit rarely, present in levels from the IA IIA. In this respect it could be possible that bone spatulas were specific implements for peculiar weaving techniques (and not for new fibers) linked with the vertical loom.²⁷

Worked Astragali

Worked and unworked astragali or animal knuckle-bones were found in several contexts at Tell Mardikh from the EB IV through the Iron Ages (more than 700 specimens, and several with signs of working). They were usually ovicaprid or pig bones, sometimes cut lengthwise with one side smoothed. Groups of astragali were found in several Iron Age contexts in Palestine, pointing out at some ritual or funerary significance, since they were stored in sacred buildings as ritual offerings or buried as funerary assemblage (Gilmour 1997). The most important discovery comes from Megiddo, where a cache of 684 astragali was found in a jar in a room dating to the beginning of the Iron Age (Loud 1948: 44–45, Figs. 100–102, Pl. 285).

The Eblaic evidence seems to confirm the ritual hypothesis and the symbolic nature of the astragalus: ca. 200 astragali came from a child burial (D.7264) located on the slope of the Acropolis mound, dating from the Middle Bronze II (ca. 1800–1600 B.C.). The storing of large amount of these bones in vessels or caches suggests that prior to being eventually offered these items were property of private citizens, and therefore could be also considered as objects reflecting the wealth of the owners, especially when they were stored or buried in tombs in such a large quantity.

At the same time the scattered presence at Ebla of more limited groups of knuckle-bones from private houses, forts, and public buildings seems to suggest also an utilitarian function as gaming-pieces, which is supported from ethnographic parallels and from their use during the Roman times (see Hübner 1992: 43–60).²⁸

24. The most important groups are those from Jerusalem (ca. 100 specimens; Ariel 1990: 127–134, Figs. 13–14), Megiddo (ca. 50; Lamon and Shipton 1939: Pls. 95: 39–62, 96: 1–9; Loud 1948: Pls. 199: 25–26, 28–30), Samaria (ca. 100; Crowfoot et al. 1957: 461–462, Fig. 115: 4–6, Pl. 36: 11), Tell Jemmeh (ca. 60; Petrie 1928: 17, Pl. 34: 5–34; Van Beek and Van Beek 1990), Zincirli (ca. 100; von Luschan and Andrae 1943: 122, Pls. 59–60).
25. They were considered implements for writing (Macalister 1912: II, 274), for working skin or leather (Macalister 1912: II, 76–77), for incising designs on pottery before firing (Duncan 1931: 240). Other scholars have suggested a function as a tool for applying cosmetics (Lamon and Shipton 1939: Pls. 95–96; Herzog *et al.* 1989: 364), a net-making tool (Petrie and Ellis 1928: 17), or an ophthalmic implement (Van Beek and Van Beek 1990).
26. The pin-beater hypothesis is possible but we have not satisfactory parallel in ancient or modern textile equipment. The bone pin-beater of the Roman age, used together with a wooden sword beater, is circular in section and with two pointed edges, usually longer and most of all stronger than the Iron Age spatulas. The tool used to beat-in the threads by modern Beduin carpet weavers is a gazelle horn, which resembles the iron/bronze hook adopted by Arab weavers on the vertical two-beam loom (Crowfoot 1941: 145, Fig. 2C).
27. It is also probable that the warp-weighted loom made easier the weaving procedures and that spatulas were adopted as a response and a solution for new working problems.

Conclusion

The following table shows the distribution of the main types of worked bones (with the exclusion of the worked astragali) into three broad chronological phases (Early Bronze IV; Middle Bronze I–II; Iron II–III and Persian), stressing which categories are represented in each period.

Table 2: Tabular summary of worked bone objects according to chronological phases

TYPOLOGY	EBA IV (ca. 2400-2000)	MBA I-II (ca. 2000-1600)	IA-P (ca. 1000-335)	TOT.
SPATULAS	/	/	39	39
SPINDLES	/	/	15	15
SPINDLE-WHORLS	2	14	1	17
AWLS A	6	2	/	8
AWLS B	6	3	/	9
AWLS C	11	2	/	13
NEEDLES A	2	1	/	3
NEEDLES B	2	2	/	4
STICKS-PINS A	9	/	/	9
STICKS-PINS B	18	/	/	18
STICKS-PINS C	18	/	/	18
STICKS-PINS D	3	2	/	5
STICKS-PINS (fragments)	38	1	/	39
STRIPS-INLAYS	/	40	/	40
PENDANT	2	/	/	2
DECORATED RODS	/	4	/	4
HORNS & BOAR'S TUSKS	1	4	3	8
OTHER	14	8	2	16
TOT.	132	83	60	275

It is evident that during Iron Age and Persian period most of the classes are lacking, whereas tools and implements connected with textile productions represent the dominant part of worked bones. On the contrary, a more diversified situation characterizes earlier periods. The majority of the objects came from the EB IV, pointing out that bone was a material with some importance for handicraft activities, side by side with metals, common stones (basalt, limestone, steatite), shell and clay, used both for quality items and for common implements.

28. Groups of 10–15 knuckle-bones were found in room L.7107, L.7108 and L.7112 of secondary wings of the Western Fort, near another room where several pottery disks of three dimensional groups (small, medium and large diameters), reworked from discarded vessels sherds, were probably also gaming pieces.

Summing up, this preliminary classification and quantitative analysis of the sample leads to propose the following observations:

- during the Early Bronze IV the bone handicraft production was devoted to specific production of ornaments with high standard of manufacture and with a quite developed standardization of items (sticks/pins). These were found together with more common households implements (especially awls and needles), which show a lower level of production. On the contrary, the craftsman of figurative and decorative inlays and beads prefers other kinds of material, such as semi-precious stones and shell (cf. Dolce 1991; Matthiae 1985: Pls. 44–47; 1989a: 94–101, 111–113; 1989b; Pinnock 1993);
- during the Middle Bronze I–II we note a flourishing of bone and ivory inlays with figurative and geometric designs, and, at the same time, a low degree of utilitarian productions. Bone ornaments like pins were instead replaced by bronze categories. Some specific type of objects (i.e., the spindle-whorls or buttons) become more popular and were highly polished and sometimes decorated with complex pattern of geometric incised decoration.
- during the later periods the worked bone industry was related specifically to some class of items, mainly connected to the textile activities (i.e., spindles or distaffs and spatulas).

In conclusion this preliminary assessment of the bone objects from Tell Mardikh-Ebla has shown trends and changes which occur in the productions over more than three millennia in a center of Inner Northern Syria, stressing the importance of not only recognizing peculiar morpho-typological classes but also comparing them with other broad functional classes of materials, in order to understand their role inside a wider perspective of handicraft activities and economic features of ancient societies.

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